amateur radio

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FEATURED IN THIS ISSUE:

- ★ POINTING ANTENNAS WITH MICROCOMPUTERS
- ★ ON-AIR MONITOR FOR SSB
- ★ VK-ZL OCEANIA DX CONTEST 1980 RULES
- ★ REVIEWS — THE MIRAGE B108 AMPLIFIER and DSI5500 FREQUENCY COUNTER
- ★ QRP CW — LET'S GIVE IT A SHOT IN THE ARM

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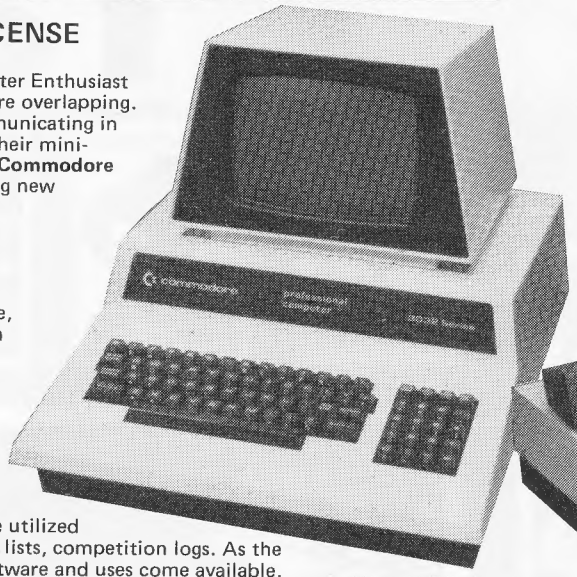

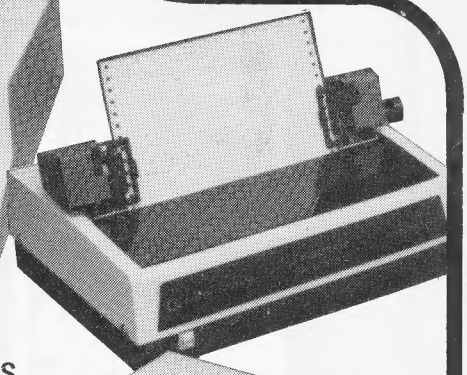

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CONTENTS

TECHNICAL

An On-Air Monitor for SSB 10
Pointing Antennas with Microprocessors 6

GENERAL

Amateur Radio and the Public 22
NOVICE NOTES — Bit of Psychology 24
QRP CW — Let's give it a Shot in the Arm 20
Reviews — The Mirage B108 2m Amplifier and DS5500 Frequency Counter 18
VK/ZL Oceania DX Contest 1980 15
WICEN in Victoria 19

DEPARTMENTS

Afterthoughts 9
ALARA 37
Amateur Satellites 30
Around the Trade 37
Awards Column 35
Contests 36
Divisional Notes 39
Hamads 41
International News 38
Intruder Watch World-Wide 36
Ionospheric Predictions 40
Letters to the Editor 36
Listening Around 25
Magazine Review 38
Magpubs 23
Main QSP 4
Novice Notes 24
QSP 5, 16
Stolen Equipment 39
VHF-UHF — an Expanding World 33
WIANEWS 5
You and DX 39

ADVERTISERS' INDEX 42

Cover Photo

AMATEUR RADIO PHILATELISTS

The Radio Amateurs' column in the December 1979 issue of the Telecommunication Journal reviews the postage stamps issued to honour amateur radio. The first was the USA 5 cent postage stamp issued in 1965 on the occasion of the 50th anniversary of the ARRL. The second was an 0.85d. stamp in 1966 by Yugoslavia to mark the 20th anniversary of SRJ. Colombia issued a 60 peso stamp in 1973 to mark the 40th anniversary of the LCD. Also in 1973 the USSR issued a 4k stamp paying homage to Ernst Krenkel, a prominent amateur. Poland issued a 1.50z stamp in 1975 for the IARU Conference in Warsaw that year. In the same year Costa Rica issued three separate airmail stamps of 1.00, 1.10 and 2.00c values to recognise the 16th annual meeting of FRACAP. In 1977 the Dominican Republic issued two stamps of 6c and 12c for the 50th anniversary of RCD, Brazil issued a 1.30Cr dollar stamp carrying the words "Day of the Radio Amateur" and Japan issued a 50y stamp commemorating the 50th anniversary of JARL. In 1979 the Dominican Republic issued a 10c stamp relating to the Beata Is. amateur competition, Bolivia issued a 3p stamp carrying the insignia of RCB, West Germany a 60p stamp honouring WARC 79 and finally Switzerland issued a 70c stamp for the 50th anniversary of USKA. V. Clark W4KFC.

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Divisional Information (all broadcasts are on Sundays unless otherwise stated).

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Broadcasts— 3570 kHz and 2m Ch. 6 (or 7): 10.00Z.

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Broadcasts— 1825, 3595, 7146 kHz, 28.32, 52.1, 52.525, 144.1, 145.6, 146.4, Rptr. Ch. 3 — Gosford, Ch. 4 — Lismore, Ch. 5 Wollongong, Ch. 8 — Dural 11.00h local (Evening 0930Z). Relays on 160, 80 and 10m, VHF and Reptr. Ch. 3, Ch. 5, Ch. 8, and Hunter Branch, Mondays 0930Z on 3595 kHz, 10m, and Ch. 3 and 6. RTTY Sunday 0030Z 7045, 14090 kHz, Ch. 52, 0930Z 3545 kHz, Ch. 52.

VIC.:
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Secretary — Mr. G. F. Atkinson VK3YFA
Broadcasts— 1840, 3600, 7135 kHz — 53.032 AM, 144.2 USB and 2m Ch. 2 (5) repeater: 10.30 local time.
Gen. Mtg. — 2nd Wed., 20.00.

QLD.:
President — Mr. A. J. Aarsse VK4QA
Secretary — Mr. W. L. Gielis VK4ABG
Broadcasts— 1825, 3580, 7146, 14342, 21175, 28400, kHz; 2m (Ch. 42, 48): 09.00 EST.
Gen. Mtg. — 3rd Friday.

SA:
President — Mr. I. J. Hunt VK5QX
Secretary — Mr. W. M. Wardrop VK5AWM
Broadcasts— 1820, 3550, 7095, 14175 kHz; 28.5 and 53.1 MHz, 2m (Ch. 8): 09.00 S.A.T.
Gen. Mtg. — 4th Tuesday, 19.30.

WA:
President — Mr. Ross Greenaway VK6DA.
Secretary — Mr. Peter Savage VK6NCP.
Broadcasts— 3560, 7075, 14100, 14175 kHz. 28.47, 53.1 MHz. 2 metres Ch. 2 Perth, Ch. 6 Wagin. Time 0130Z.
Gen. Mtg. — 3rd Tuesday.

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Broadcasts— 7130 (AM) kHz with relays on 2m Ch. 2 (S), Ch. 8 (N), Ch. 3 (NW), 09.30 EST.

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Postal Information:
VK1 — P.O. Box 46, Canberra, 2600.
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P.O. Box 123, St. Leonards, NSW 2065.
VK3 — 412 Brunswick St., Fitzroy, 3065 (Ph. (03) 41 3535 Weekdays 10.00-15.00h).
VK4 — G.P.O. Box 638, Brisbane, 4001.
VK5 — G.P.O. Box 1234, Adelaide, 5001 — HQ at West Thebarton Rd., Thebarton.
VK6 — G.P.O. Box N1002, Perth, 6001.
VK7 — P.O. Box 1010, Launceston, 7250.
VK8 — (Incl. with VK5), Darwin AR Club, P.O. Box 37317, Winnellie, N.T., 5789.

Slow morse transmissions — most week-day evenings about 09.30Z onwards around 3550 kHz.

VK QSL BUREAUX

The following is the official list of VK QSL Bureaux, all are inwards and outwards unless otherwise stated.

VK1 — QSL Officer, G.P.O. Box 46, Canberra, A.C.T. 2600.
VK2 — QSL Bureau, C/- Hunter Branch, P.O. Teralba, N.S.W. 2284.
VK3 — Inwards QSL Bureau, Mr. E. Trebilcock, 340 Gillies Street, Thornbury, Vic. 3071.
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VK5 — QSL Bureau, Mr. Ray Dobson VK5DI, 16 Howden Road, Fulham, S.A. 5024.
VK6 — QSL Bureau, Mr. J. Rumble VK6RU, G.P.O. Box F319, Perth, W.A. 6001.
VK7 — QSL Bureau, G.P.O. Box 371D, Hobart, Tas. 7001.
VK8 — QSL Bureau, C/- VK8HA, P.O. Box 1418, Darwin, N.T. 5794.
VK9, 0 — Federal QSL Bureau, Mr. N. R. Penfold VK6NE, 388 Huntriss Rd., Woodlands, W.A. 6018.

QSP —

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The value of a strong national society, as well as unified action, well reflected in the results of WARC 79.

It is now just as important, in the post-WARC period, to maintain the unified strength of the WIA. There are still many vital issues to be decided such as TV channels 0 and 5A, the incorporation of the new HF bands at 10, 18 and 24 MHz into the Australian frequency table and various other matters.

Also on the international scene the unified action of the national societies making up the IARU will be needed to continue the good work commenced by IARU Headquarters.

There are countries that need to know more about amateur radio, including some in our Region. The IARU could also help in easing the difficulties in obtaining permission by visiting amateurs to operate away from their home countries.

Apart from giving WIA a stronger voice, an increasing membership helps to keep the cost per individual member down.

As you know the benefits obtained by the representations of the WIA are not restricted to members only. It therefore behoves all amateurs to belong. Remember: "Strength and Unity" for the good of amateur radio.

To ensure continuity, support the WIA.

D. A. WARDLAW VK3ADW,
Federal President. ■

WIANEWS

1980 FEDERAL CONVENTION

Because the Convention will be over by the time you read this, only a brief resume will be given of the Agenda Items received after WIANEWS for April AR was written. This is to allow you to follow any items through if you wish to.

One Agenda Item of interest relates to the well-known "International Diamond" style of membership badge, well-known because anyone who has travelled overseas can vouch for the effectiveness of an instantly-recognisable badge used by many of the larger societies such as ARRL, RSGB and DARC. This Agenda Item looks at this style of badge, not to replace the existing well-favoured badge, but to offer members an alternative, particularly for overseas travel.

VK2 requested a review of the entire examination and licensing privileges conditions, whilst three from VK3 cover specific topics — permanent morse exemptions for Novices who pass the 10 w.p.m. test, that only one theory syllabus should be used with, say, 70 per cent pass marks for AOCP and 50 per cent for Novices and discussions on third party traffic. Also VK3 wants discussions about a common band for all licensees, perhaps a segment on 6m or even 70 cm. Some of these items had been debated at previous Conventions and, in the case of third party traffic, the P. and T. Department was asked in 1977 to grant this but nothing further has transpired despite reminders.

Another item from VK2 wanted primary and secondary WICEN frequencies for amateur bands not already provided for (see WIA 1979 Call Book, pages 24 and 25). VK5 wanted a discussion about WIA broadcasts and VK3 submitted an item proposing that anyone knowingly making fraudulent applications for VHF awards or records should be debarred from receiving any of these. An Executive item sought discussions on AR and Magpubs activities.

Hopefully it will be possible to include a brief report in June/July ARs on some of the major issues discussed.

Every year there is always much discussion on one or more of the Annual Reports submitted by the specialised Federal Sub-Committees. At this Convention there will be debate on the Contests and Award Reports. Both areas are showing considerable increases in activity and more publicity is sought. The Federal Awards Manager suggests, however, that the WAVKCA (VHF) should be deleted because of poor results (only 13 issued in seven or eight years) or some overlapping with the WAS (VHF) Award. Possibly also the VHFCC needs reviewing for similar reasons, he wrote.

There will obviously be considerable discussion about the IARU and WARC 79 reports, particularly as both have future repercussions, for which Federal Council guidance will be required.

CHANNEL 0

The following paragraphs are quoted directly from a letter dated 7th March received by VK3NM from the Minister for Post and Telecommunications —

"You should perhaps be aware that insofar as multilingual television is concerned, transmission on UHF is to proceed with the target date of October 1980 for commencement. An interim VHF service on channel 0 is to commence as close as possible to October 1980 simulcasting the same programmes as transmitted on UHF. After some time transmission on channel 0 will cease and continue solely on UHF.

I am aware of difficulties experienced by Amateur Radio enthusiasts like yourself as a result of the use of channel 0 but regrettably, the use of this channel in the Melbourne Metropolitan area is unavoidable in the present circumstances.

It is recognised that the low frequency of channel 0 (45-52 MHz) has limitations as far as television transmission is concerned. However, it is still a very useful television channel, and there is no possibility in the foreseeable future that this channel will be phased out completely. However, you may be assured that in assigning channel 0 the problems of the amateur service are kept in mind and are minimised wherever possible.

The merits of the UHF band are also well recognised and this band is being opened up for television use as is evidenced by the fact that the permanent allocation for the multicultural television service is in this band.

MEETINGS

At the meeting of the Executive on 20th March much discussion took place about AR arising out of a Publications Committee meeting held on 4th March. The draft Profit and Loss Account and Balance Sheet for 1979 were examined as well as a draft superannuation scheme for permanent staff. Applications to join IARU made by the amateur societies of Monserrat, Cuba, Cambia and the Solomon Islands were voted on in favour. Among many other subjects discussed were the International Diamond Style of alternative membership badge, many of the 1980 Convention Items, and agreement to close Box 67, East Melbourne, for WIA use.

QSP

LDEs

In his TT column in Radio Communications February 1980 Pat Hawker refers again to long delay echoes and draws attention to a carefully researched paper from D. B. Muldrey of the Canadian Department of Communications Research on the subject. Very briefly LDEs are explained as ionospheric phenomena relating to ducting or non-linear interactions which could account for delays up to tens of seconds. Could it be, he asks, that the difference between pre-war and post-war reports of LDEs may be explained by the vast increase in high-power broadcast, television and radar transmitters during the period 1939-1950, all raising the electron temperature of the ionosphere which, in some way, invalidated the "natural conditions" that gave rise to echoes? ■

INFRARED LIGHT CONTROLS FOR CORDLESS TELEPHONES

"Infrared light, today the preferred medium for remote control of television sets, garage doors and interior lighting, is now conquering the telephone. In this case the invisible light is used to do away with the cumbersome cord; the receiver is on its own; it is connected with the telephone and the telephone network simply by a wireless infrared link." One system was displayed at Telecom 79 in Geneva. The user of the receiver section can move around the room freely while telephoning. Control pulses and speech are transmitted via an infrared link between the receiver and a stationary section mounted on a wall. Both receiver and stationary section are equipped with infrared transmit and receive diodes. Direct line of sight between the two is unnecessary because the infrared rays are distributed by reflection within the room. Sensitivity is sufficient for closed rooms up to 100 sq. m. and propagation is restricted within the room. No radio frequencies are required.—From Telecommunication Journal, December 1979, new products section. ■

SOMETHING KNOWN, MAYBE SOON FORGOTTEN?

"Amateur radio is a great delinquency preventer" says W6ONC and he certainly ought to know. He is a distinguished judge in the Superior Court of Los Angeles County, currently in the Juvenile Department. "Amateur radio can be a tremendous character builder for young people, keeping young minds busy, and out of difficulty."—Worldradio, February 1980. ■

Pointing Antennas with Microcomputers

Bill Johnston N5KR
1808 Pomona Drive, Las Cruces,
New Mexico 88001 USA

The impact of microcomputers on amateur radio has been significant in recent years and is expected to increase at a dramatic rate. Radio amateurs are considered to be the founders of the "hobby computer" movement, and in the United States no area of ham radio remains unaffected. On the basis of reports appearing in the various computer and amateur radio magazines, it appears that the Australian experience closely parallels ours.

A frequently asked question is, "What can I do with a microcomputer in my ham shack?". To be perfectly honest, what you can do depends only upon your imagination. There are, of course, many trivial problems and games that come to mind, but sooner or later one desires to put his equipment to work on useful and substantial problems.

One of the most remunerative applications is in the pointing of antenna systems for HF and VHF DX work. The value lies in the fact that, for most of us, it is difficult to visualize the shortest path between two points on the surface of the earth. That path is called the great circle path, and it leads us to some surprising discoveries.

As a case in point, consider the relationship between Australia and South America. Most of the South American land mass lies east and north of Australia, but the great circle paths between most points in Australia and South America take a southerly course. Some of these paths pass over Antarctica, and even the South Pole!

The angle that the great circle path forms with a line running due north through your QTH is called the *great circle bearing.* (The term *azimuth* is sometimes used interchangeably, especially in satellite tracking applications.) If the great circle bearing between your QTH and the station you are in contact with is known, you can line your antenna up on that bearing and be assured that the antenna is aimed along the shortest possible path. If you are interested in learning more about great circle bearings and the relationship between distanct stations, you may wish to refer to "DX Antenna Pointing",[1] which appeared in the August 1978 issue of *Ham Radio Horizons.*

Calculating the bearing is a relatively simple matter involving nothing more complicated than trigonometry. The appropriate formulas have appeared many times in the amateur literature, and one straightforward approach which yields non-ambiguous answers are given in *QST.*[2] The process is tedious and time consuming, however, so the microcomputer has become our salvation.

There are various degrees to which the problem can be reduced by the computer. In the simplest form, co-ordinates of the two stations would be provided as input, and the computer would function as a glorified calculator to provide the bearing. A particularly industrious amateur with a good knowledge of digital electronics might want to interface his rotator directly to the computer. In that way the computer would not only calculate the correct bearing, but it would also command the antenna to turn to that direction.

An intermediate approach is more suitable for most of us. A computer programme can be written to calculate the great circle bearing and distance from one's own QTH to a number of distant locations. The results can then be listed out on paper or on a video screen for ready reference. Using large scale digital computers, the author began preparing printouts of this type in 1966. These charts were described in *Radio Communication*[3] in 1972. The need for large computers has long since passed. The average ham can now produce equivalent charts on a home computer in a matter of seconds.

Fig. 1 illustrates such a chart, centred on Birdsville, Queensland. The bearing, distance in miles and kilometres, and return bearing are given for each of 220 distant locations. Note that the return bearing (RBNG) is the bearing at which the distant operator should set his antenna to point at Birdsville. This bearing is not merely 180 degrees opposite from the outward bearing (BNG); it must be computed from the same equations that are used to arrive at the outward bearing. The easiest way to do this is to simply interchange the co-ordinates of the two stations and run through the calculations a second time. The actual numerical difference between BNG and RBNG can be anywhere from 0 to 180 degrees, depending upon the relative locations of the stations.

Long path bearings are a different matter. Though it is not shown on the printout, the long path bearing from your own QTH is indeed 180 degrees opposite that of the regular bearing (BNG). The long path bearing from the distant station back to you is 180 degrees opposite RBNG.

Rather than take the fun out of the project, the actual development of the computer programme is left to the reader. A few useful hints will be offered, however. First of all, there have been a number of antenna pointing computer programmes (all in BASIC) published in the American ham literature in the past three or four years. Virtually all of these contain errors and yield incorrect results. Unless you enjoy debugging someone else's programme, it is best to steer clear of them.

Be sure to remember the distinction between the outward bearing, the return bearing, and the long path bearings. Also be sure to properly take into consideration the algebraic sign of the latitudes and longitudes of the stations.

If you would like something to check your answers against, the author will be happy to send you a printout like that shown in Fig. 1, centred on your own QTH. There is a nominal charge of US $2 ($3 by airmail) to offset the cost of materials and postage. The chart illustrated lists only Australian cities (220 locations total), but there is another version available which lists 330 DX plus 330 USA cities (660 locations only). The same minimum charge applies to this printout also. Either or both charts will be prepared, as desired. Send your request directly to the author, Bill Johnston, 1808 Pomona Drive, Las Cruces, New Mexico 88001, USA. Be sure to indicate the town that you want the chart centred on. If it is not one of the 220 cities listed on the chart in Fig. 1, pleave give the latitude and longitude or describe its location.

VK4 QLD. BIRDSVILLE
25-54S 139-22E

			BNG	MI	KM	RBNG	*				BNG	MI	KM	RBNG
VK1	A.C.T.	CANBERRA	141	869	1399	316	*	VK2	N.S.W.	WAGGA WAGGA	145	794	1278	321
VK1	A.C.T.	QUEANBEYAN	141	881	1417	315	*	VK2	N.S.W.	WAVERLY	131	900	1449	305
VK2	N.S.W.	ALBURY	149	833	1340	326	*	VK2	N.S.W.	WEST WYALONG	142	726	1168	318
VK2	N.S.W.	ARMIDALE	116	812	1307	290	*	VK2	N.S.W.	WILCANNIA	149	461	741	327
VK2	N.S.W.	BANKSTOWN	131	890	1432	305	*	VK2	N.S.W.	WILLOUGHBY	130	893	1438	305
VK2	N.S.W.	BATEMANS BAY	139	932	1500	314	*	VK2	N.S.W.	WOLLONGONG	133	904	1456	307
VK2	N.S.W.	BATHURST	133	803	1292	308	*	VK2	N.S.W.	WOY WOY	129	888	1429	303
VK2	N.S.W.	BEGA	143	965	1553	317	*	VK3	VIC.	ALTONA	160	886	1426	337
VK2	N.S.W.	BLACKTOWN	131	879	1414	305	*	VK3	VIC.	APOLLO BAY	165	922	1484	343
VK2	N.S.W.	BOURKE	127	494	794	304	*	VK3	VIC.	ARARAT	166	813	1309	344
VK2	N.S.W.	BROKEN HILL	164	436	702	343	*	VK3	VIC.	BAIRNSDALE	152	955	1537	327
VK2	N.S.W.	CANTERBURY	131	894	1439	305	*	VK3	VIC.	BALLARAT	163	848	1364	341
VK2	N.S.W.	COBAR	136	549	884	313	*	VK3	VIC.	BENDIGO	160	804	1294	338
VK2	N.S.W.	COFFS HARBOUR	113	891	1434	287	*	VK3	VIC.	BENTLEIGH	160	893	1438	337
VK2	N.S.W.	CROWS NEST	131	895	1440	305	*	VK3	VIC.	BIRCHIP	164	728	1172	342
VK2	N.S.W.	DENILIQUIN	155	743	1196	332	*	VK3	VIC.	BOX HILL	159	889	1431	336
VK2	N.S.W.	DUBBO	130	709	1140	306	*	VK3	VIC.	BRIGHTON	160	893	1437	337
VK2	N.S.W.	EDEN	144	988	1590	318	*	VK3	VIC.	BROADMEADOWS	160	875	1408	337
VK2	N.S.W.	FAIRFIELD	131	884	1423	305	*	VK3	VIC.	BRUNSWICK	160	882	1420	337
VK2	N.S.W.	FORBES	137	732	1178	313	*	VK3	VIC.	CAMBERWELL	159	889	1430	336
VK2	N.S.W.	GILGANDRA	128	689	1110	303	*	VK3	VIC.	CANN RIVER	147	989	1591	322
VK2	N.S.W.	GLENFIELD	132	886	1426	306	*	VK3	VIC.	CAULFIELD	160	892	1435	337
VK2	N.S.W.	GOULBURN	137	867	1396	312	*	VK3	VIC.	COBURG	160	881	1418	337
VK2	N.S.W.	GRAFTON	111	868	1397	284	*	VK3	VIC.	DROUIN	157	926	1489	334
VK2	N.S.W.	GUNDAGAI	143	819	1318	318	*	VK3	VIC.	EAST BRIGHTON	160	893	1438	337
VK2	N.S.W.	HAY	152	678	1091	330	*	VK3	VIC.	ESSENDON	160	881	1418	337
VK2	N.S.W.	HOLROYD	131	884	1422	305	*	VK3	VIC.	FITZROY	160	885	1424	337
VK2	N.S.W.	HURSTVILLE	131	895	1441	305	*	VK3	VIC.	FOOTSCRAY	160	883	1421	337
VK2	N.S.W.	KATOOMBA	132	847	1363	307	*	VK3	VIC.	GEELONG	162	893	1438	340
VK2	N.S.W.	KU-RING-GAI	130	889	1431	304	*	VK3	VIC.	GLEN IRIS	159	891	1434	336
VK2	N.S.W.	LEICHHARDT	131	893	1437	305	*	VK3	VIC.	HAMILTON	170	833	1341	348
VK2	N.S.W.	LISMORE	106	876	1410	280	*	VK3	VIC.	HASTINGS	160	921	1482	337
VK2	N.S.W.	LITHGOW	132	831	1338	306	*	VK3	VIC.	HEIDELBERG	159	884	1422	336
VK2	N.S.W.	LIVERPOOL	131	885	1424	306	*	VK3	VIC.	HORSHAM	168	766	1232	347
VK2	N.S.W.	LORD HOWE IS.	113	1254	2018	283	*	VK3	VIC.	LAKES ENTRANCE	151	968	1559	326
VK2	N.S.W.	MARRICKVILLE	131	896	1441	305	*	VK3	VIC.	LEONGATHA	158	950	1528	334
VK2	N.S.W.	MOREE	113	686	1105	289	*	VK3	VIC.	MAFFRA	151	968	1559	326
VK2	N.S.W.	NARRANDERA	147	746	1200	323	*	VK3	VIC.	MALVERN	160	890	1433	337
VK2	N.S.W.	NEWCASTLE	126	889	1431	300	*	VK3	VIC.	MELBOURNE	160	886	1425	337
VK2	N.S.W.	NORTH SYDNEY	131	895	1441	305	*	VK3	VIC.	MILDURA	164	597	960	343
VK2	N.S.W.	NOWRA	136	911	1467	310	*	VK3	VIC.	MOE	156	937	1508	333
VK2	N.S.W.	ORANGE	133	775	1247	309	*	VK3	VIC.	MOORABBIN	160	894	1439	337
VK2	N.S.W.	PARKES	135	728	1171	311	*	VK3	VIC.	MORNINGTON	160	913	1469	337
VK2	N.S.W.	PARRAMATTA	131	885	1423	305	*	VK3	VIC.	MORWELL	156	945	1521	332
VK2	N.S.W.	PORT MACQUARIE	118	905	1456	292	*	VK3	VIC.	MOUNT WAVERLY	159	893	1438	336
VK2	N.S.W.	RANDWICK	131	900	1449	305	*	VK3	VIC.	NORTHCOTE	159	883	1421	336
VK2	N.S.W.	ROCKDALE	131	896	1442	305	*	VK3	VIC.	NUNAWADING	159	890	1432	336
VK2	N.S.W.	RYDE	131	889	1431	305	*	VK3	VIC.	OAKLEIGH	159	894	1438	336
VK2	N.S.W.	SPIT JUNCTION	130	896	1442	305	*	VK3	VIC.	ORBOST	149	973	1565	324
VK2	N.S.W.	SYDNEY	131	897	1443	305	*	VK3	VIC.	PORTLAND	172	870	1399	351
VK2	N.S.W.	TAMWORTH	120	786	1266	294	*	VK3	VIC.	PRAHRAN	160	888	1429	337
VK2	N.S.W.	TAREE	121	893	1437	294	*	VK3	VIC.	PRESTON	159	882	1420	336
VK2	N.S.W.	TERALBA	126	883	1421	300	*	VK3	VIC.	QUEENSCLIFF	161	908	1461	339
VK2	N.S.W.	TORONTO	127	884	1422	301	*	VK3	VIC.	ST. KILDA	160	889	1431	337
VK2	N.S.W.	TWEED HEADS	103	884	1422	277	*	VK3	VIC.	SALE	154	955	1536	330
1			BNG	MI	KM	RBNG	*	2			BNG	MI	KM	RBNG
VK3	VIC.	SUNSHINE	160	881	1417	337	*	VK5	S.A.	CEDUNA	217	550	885	40
VK3	VIC.	THORNBURY	159	882	1420	336	*	VK5	S.A.	COOBER PEDY	232	357	575	54
VK3	VIC.	TOORAK	160	889	1430	337	*	VK5	S.A.	COOK	237	634	1020	61
VK3	VIC.	TRARALGON	156	947	1523	332	*	VK5	S.A.	ELIZABETH	184	610	982	4
VK3	VIC.	VERMONT	159	892	1435	336	*	VK5	S.A.	ENFIELD	184	622	1001	5
VK3	VIC.	WARRNAMBOOL	169	881	1418	347	*	VK5	S.A.	EYRE	238	901	1451	64
VK3	VIC.	WERRIBEE	161	885	1424	338	*	VK5	S.A.	GAWLER	183	603	971	4
VK3	VIC.	WONTHAGGI	159	949	1527	336	*	VK5	S.A.	MARION	184	631	1016	5
VK4	QLD.	AIRLIE BEACH	59	709	1140	235	*	VK5	S.A.	MITCHAM	184	629	1012	4
VK4	QLD.	ATHERTON	35	714	1148	212	*	VK5	S.A.	MT. GAMBIER	175	828	1333	354
VK4	QLD.	BALMORAL HGTS.	100	852	1371	274	*	VK5	S.A.	OODNADATTA	244	266	428	66
VK4	QLD.	BIRDSVILLE	0	0	0	0	*	VK5	S.A.	PORT ADELAIDE	185	620	998	5
VK4	QLD.	BLACKALL	76	395	635	254	*	VK5	S.A.	PORT AUGUSTA	192	466	750	12
VK4	QLD.	BRISBANE	100	850	1368	274	*	VK5	S.A.	PORT LINCOLN	198	645	1037	20
VK4	QLD.	BUNDABERG	88	813	1308	262	*	VK5	S.A.	VICTOR HARBOUR	184	669	1077	4
VK4	QLD.	BURKETOWN	0	564	908	180	*	VK5	S.A.	WHYALLA	192	504	811	13
VK4	QLD.	CAIRNS	35	744	1197	212	*	VK5	S.A.	WOODVILLE	184	622	1002	5
VK4	QLD.	CALOUNDRA	97	855	1376	271	*	VK5	S.A.	WOOMERA	198	410	660	19
VK4	QLD.	CHARLEVILLE	96	428	689	273	*	VK6	W.A.	ALBANY	239	1422	2288	70
VK4	QLD.	CHARTERS TOWERS	49	595	957	226	*	VK6	W.A.	BROOME	293	1225	1971	120
VK4	QLD.	CUNNAMULLA	112	416	670	290	*	VK6	W.A.	BUNBURY	245	1510	2430	76
VK4	QLD.	DALBY	100	740	1191	274	*	VK6	W.A.	CARNARVON	267	1602	2579	98
VK4	QLD.	EMERALD	75	576	926	252	*	VK6	W.A.	DAMPIER	279	1478	2378	109
VK4	QLD.	GLADSTONE	82	759	1221	257	*	VK6	W.A.	ESPERANCE	238	1180	1899	67
VK4	QLD.	GOLD COAST	103	876	1410	276	*	VK6	W.A.	GERALDTON	257	1529	2461	88
VK4	QLD.	GOONDIWINDE	108	696	1121	283	*	VK6	W.A.	GILES MET STATION	273	692	1114	97
VK4	QLD.	GYMPIE	94	825	1328	268	*	VK6	W.A.	KALGOORLIE	249	1137	1830	77
VK4	QLD.	HUGHENDEN	42	464	747	220	*	VK6	W.A.	MADURA	238	854	1375	64
VK4	QLD.	INNISFAIL	38	719	1156	215	*	VK6	W.A.	MARBLE BAR	281	1283	2066	108
VK4	QLD.	IPSWICH	101	834	1343	275	*	VK6	W.A.	MOUNT MAGNET	259	1333	2145	89
VK4	QLD.	LONGREACH	62	351	564	240	*	VK6	W.A.	NORSEMAN	244	1146	1845	72
VK4	QLD.	MACKAY	64	702	1130	240	*	VK6	W.A.	PERTH	248	1479	2380	80
VK4	QLD.	MARYBOROUGH	91	830	1335	265	*	VK6	W.A.	PORT HEDLAND	282	1374	2212	110
VK4	QLD.	MIAMI	103	879	1415	277	*	VK6	W.A.	SUBIACO	248	1482	2385	80
VK4	QLD.	MITCHELL	96	534	860	272	*	VK6	W.A.	WYNDHAM	313	1023	1646	137
VK4	QLD.	MOGGILL	101	840	1352	275	*	VK7	TAS.	BURNIE	162	1112	1790	338
VK4	QLD.	MOSSMAN	32	757	1218	210	*	VK7	TAS.	DEVONPORT	161	1128	1816	337
VK4	QLD.	MT. ISA	1	357	574	181	*	VK7	TAS.	FLINDERS ISLAND	155	1093	1760	330
VK4	QLD.	NORTHGATE	100	852	1370	274	*	VK7	TAS.	HOBART	161	1256	2021	337
VK4	QLD.	OAKEY	101	769	1238	275	*	VK7	TAS.	KING ISLAND	166	999	1607	343
VK4	QLD.	QUILPIE	100	306	493	278	*	VK7	TAS.	LAUNCESTON	159	1161	1868	335
VK4	QLD.	ROCKHAMPTON	78	721	1160	254	*	VK7	TAS.	QUEENSTOWN	164	1171	1885	341
VK4	QLD.	ROMA	97	585	942	273	*	VK7	TAS.	SMITHTON	164	1084	1744	341
VK4	QLD.	ST. GEORGE	107	586	943	282	*	VK8	N.T.	ALICE SPRINGS	293	376	605	115
VK4	QLD.	SOUTHPORT	103	876	1410	276	*	VK8	N.T.	AYERS ROCK	272	517	832	96
VK4	QLD.	STANTHORPE	107	795	1279	281	*	VK8	N.T.	DARWIN	328	1081	1740	150
VK4	QLD.	THURSDAY ISLAND	11	1074	1728	190	*	VK8	N.T.	KATHERINE	328	913	1470	151
VK4	QLD.	TOOWOOMBA	101	784	1262	275	*	VK8	N.T.	NEWCASTLE WATERS	326	701	1127	148
VK4	QLD.	TOWNSVILLE	47	659	1060	225	*	VK8	N.T.	TENNANT CREEK	321	543	874	143
VK4	QLD.	WARWICK	104	795	1279	279	*	VK9		COCOS-KEELING ISLANDS	281	2914	4689	115
VK4	QLD.	WHITEROCK	35	740	1191	213	*	VK9		MELLISH REEF	64	1207	1942	238
VK4	QLD.	WILLIS ISLETS	48	952	1533	224	*	VK9N		NORFOLK ISLAND, KINGSTON	104	1761	2835	270
VK4	QLD.	WINTON	44	335	539	223	*	VK9X		CHRISTMAS IS., FLYING FISH	290	2442	3931	121
VK5	S.A.	ADELAIDE	184	624	1005	4	*	VK0		MC DONALD ISLANDS	222	3852	6199	89
VK5	S.A.	ANDAMOOKA	202	341	548	23	*	VK0		MACQUARIE ISLAND	159	2217	3568	325
3			BNG	MI	KM	RBNG	*	4			BNG	MI	KM	RBNG

FIGURE 1:
A great circle bearing and distance print-out on a home computer. For this example, the computations were centred on Birdsville, Qld., showing the bearing and distance to each of 220 other cities. The column labelled RBNG gives the return bearing to be used at each distant location in order to point an antenna back toward Birdsville.

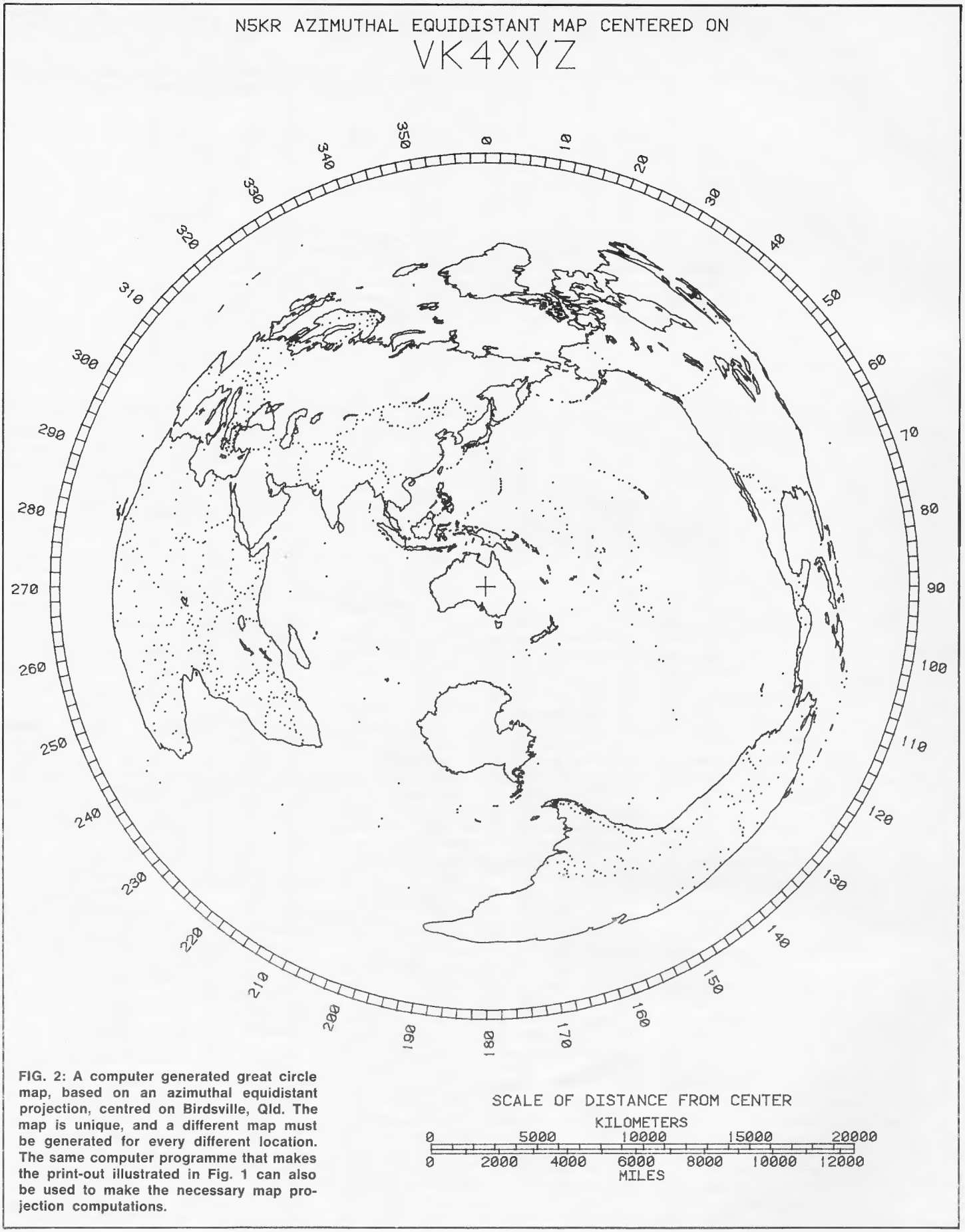

FIG. 2: A computer generated great circle map, based on an azimuthal equidistant projection, centred on Birdsville, Qld. The map is unique, and a different map must be generated for every different location. The same computer programme that makes the print-out illustrated in Fig. 1 can also be used to make the necessary map projection computations.

GREAT CIRCLE MAPS

Once you have your great circle bearing programme running, there is another fascinating project you can complete with little additional work. Your computer can draw great circle maps, using the same programme to do the mathematical calculations. All you need is a plotter or CRT graphics device.

Fig. 2 illustrates a computer drawn azimuthal equidistant map (the technical name for a great circle map). This particular map is drawn centred on Birdsville so the reader can make comparisons with the printout in Fig. 1. Just as every great circle bearing printout must be computed based on the user's exact QTH, the azimuthal equidistant projection must also be computed and drawn based on the user's exact QTH. In other words, every map for every different location is unique.

As a matter of review, great circle maps are used in the following manner. Suppose that a ham in Birdsville wants to point his antenna toward Auckland, New Zealand. Using the map in Fig. 2, he would draw a line from the centre (Birdsville), through Auckland, and out to the edge of the map. There the great circle bearing would be read from the legend on the perimeter. The distance can be measured using the scale provided at the bottom of the map.

The reason that the same computer programme can be used to draw the map is this: The computed great circle bearing to a distant point is the same angle as measured on the map. The radial distance from the map centre to the distant point is in direct proportion to the great circle distance on the surface of the earth. In other words, the computed bearing and distance are *also* the map co-ordinates in polar form. All you have to do beyond that is to multiply the distance by the appropriate scale factor to make the map the desired size.

For a great many years great circle maps existed for only a few cities in the world. Less than five years ago the author was quoted a price in excess of $1,200 to have a great circle map drawn for his own QTH by a commercial map company. Now it is possible to make one with your own computer. The only obstacle remaining is the high cost of peripheral graphics equipment, especially for high quality, high resolution applications.

For those who do not have the graphics hardware to produce their own maps, the author has made arrangements to have this done for interested persons. The maps will be of the style shown in Fig. 2 and will be drawn by the computer on a high quality pen-and-ink plotter. The finished size is 11 by 14 inches (28 by 35 cm). The total cost for materials, postage, computer and plotter time is $10 ($12 via airmail). Be sure to indicate the call sign that is to be printed at the top.

There are many other types of maps which have applications in amateur radio. All of these can be made on a home computer with the proper software and peripheral hadware. An in-depth discussion of the subject, including programme listings in BASIC, was carried in *BYTE*.[4]

SUMMARY

Recent advances in computer technology have put enormous computing power in the hands of the radio amateur. The solution of the great circle bearing and distance problem on a home computer is an instructive project whose results can be used every time one's station is put on the air.

The author would like to acknowledge Cyril Bird VK4CB, who prompted the development of a data base of 220 Australian cities and their co-ordinates. It was this data base that was used when generating the chart illustrated in Fig. 1.

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AFTERTHOUGHTS

I struck again with the FT-75 VXO article in AR, March 1980.

The following omissions and errors may be noted:

1. Page 23, under Fig. 9, should read: **"One filter required between each carrier generator and corresponding converter".**
   Note that carrier excitation to each converter is not switched — it goes direct via coaxial cable and the carrier filter.
2. P.22, Fig.4, under "SK4 to SK6" read: **"SK4 to SK6 via carrier filter".**
3. P.22, Fig. 6, 50 Ω output connector should be labelled **"SK6".**
4. P.21, Fig. 1, second row — **dual band converter block should be linked to dual heterodyne carrier generator block.**
   Amateurs desirous of producing a compact version using PC boards should proceed as follows:
   3 separate enclosures are required.
   1. **Contains PC board for VXO and 53 MHz multiplier.**
   2. **Contains PC board for the 3 converters.**
   3. **Contains PC board for the 3 carrier generators.**

The filters should be in separate enclosures external to the main enclosure.

Signed, Murphy. ■

An On-Air Monitor for SSB

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Before the age of SSB, we used to have some methods to monitor RF output either by using a separate receiver with cut-off bias on an RF amplifier or by using a simple detector with an AF amplifier. Frequently we used to listen to our own modulated signals to check the audio quality or tone of the CW signal. Of course AM contains a carrier which makes it easy to demodulate signals using simple circuits. In those days rigs were mostly home brew which generally meant less reliable equipment than the commercially manufactured equipment which you have now. Monitoring was essential in the days of home brew gear.

After SSB took over from AM and particularly when commercial transceivers came to be very common the practice of monitoring RF output was greatly reduced except for the few amateurs who have monitorscopes. However, we are still encountering stations whose signals are over-modulated, over-compressed or distorted. The need for a monitor, or ON AIR MONITOR to be more exact, cannot be ignored and it is getting more important now since there are so many more stations with very effective but quite critical devices like speech processors and kW linears. As a matter of fact, there are more technical problems in demodulating SSB signals than there are for the AM mode if we provide a monitor system for use with the transceiver. The manufacturers seem to be backward in developing conventional built-in monitoring systems in their products. Recently some high grade models such as the TS820 and the FT901 have provided a built-in monitor function. However, we cannot regard them as ON AIR MONITORS because the monitoring signals are just taken from the microphone amplifier and have nothing to do with RF output on the air. In this article some methods of monitoring the transmission of SSB or CW signals are discussed and some examples of a practical monitor are shown either by the modification of a speech processor or by home brewing a separate unit.

THE PRINCIPLE OF THE SSB MONITOR

To demodulate SSB signals a carrier or BFO, together with the signal, should be injected into a product detector. If you have VFO which covers your frequency you can demodulate SSB. However, such a straight type monitor requires you to zero-in and you must follow your signal whenever you QSY. In order to eliminate the need for tuning which is troublesome in practice the monitor tuning should be linked with the transceiver or its VFO. The VFO signal will produce a constant intermediate frequency after the heterodyne mixer. This IF can be demodulated by injecting a constant frequency BFO. In fact if the transceiver is of single conversion, the IF and the BFO are exactly the same as the transceiver itself but if your gear uses double conversion the IF frequency is different for each band and different BFO frequencies are required for each band — as many as the number of the bands.

Here what I define as single conversion includes the premix type of single conversion so long as the output signal after the premixer is available. If it is not available and only the VFO output is available you should regard it as double conversion. The fundamental scheme is shown in Fig. 1 and the relationship between the VFO and the intermediate frequency output after the heterodyne mixer of the various types of commercial equipment available are shown in Table 1. There is a temptation to take advantage of the local oscillator and the BFO in the transceiver itself as the heterodyne signals and feed them into the monitor because the mixing process is very similar. However this idea is usually quite risky and it may produce spurious output due to the leakage of these signals through the external circuit used for the monitor. The next problem is the IF coupling circuit between the mixer and the detector. As already mentioned, if the transceiver is of double conversion the IF varies according to the band you need. The IF coupling circuit should have a broad bandwidth by means of either RF coupling or a broadband transformer using toroidal cores.

The other way is by reversing the injection frequencies to the mixer and the detector. That is, the BFO to the mixer and the VFO to the detector. This inverse injection makes the IF equal to the VFO frequency varying over the same frequency range as the VFO. A resonant bandpass coupling circuit becomes of use for the IFT.

AN EARLY FAILURE

Three years ago I tried to build a monitor into a Kenwood TS520. This monitor was of the type that we called a *hermit crab.* All heterodyne signals were drawn from the TS520 itself and the output from the detector was fed into the AF amplifier in the TS520. This device was built on the small printed board as shown in Photo 1, and its circuit is shown in Fig. 2. The unit used double conversion, the same as in the TS520, and buffers were placed on external connections. The demodulated audio quality was normal and no worsening of carrier leakage was detected and so I put it into operation. However it was not long before I was called by a JA1 station saying that the signal on 14.150 MHz was 59 + 20 dB but in the CW band there was an LSB spurious of 55 to 56. I tried to eliminate this problem by altering the injection level and varying the value of the coupling capacitors to as small a value as possible but could not resolve the problem. Finally I removed the monitor board from the TS520.

It may be hasty to draw a conclusion from this simple experiment but I am sure that a system like this is always very critical from the point of view of troublesome spurious signals. Judging from the fact that some commercially built gear such as the SIGNAL ONE or the recent Kenwood TS120 have an internal mixer in their circuitry mixing the VFO with the BFO signal for the purpose of providing the variable pass band function it should be possible to make a viable unit if the system is suitably designed and set up. Anyway the following items would be of importance when you try to implement such a *hermit crab* system.

1. Mixers and the product detector must be of balanced or double balanced type to cancel straight through leakage.
2. All parts should be mounted in a suitable shielded enclosure so as to pre-

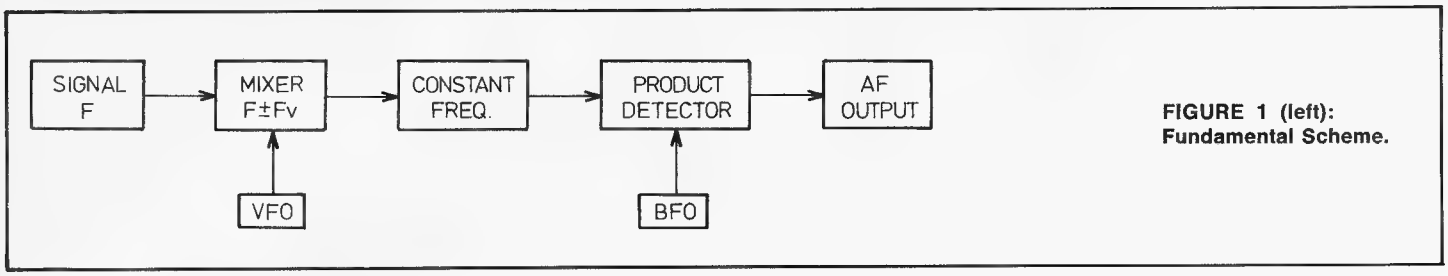


FIGURE 1 (left): Fundamental Scheme.

vent stray couplings or to make them as small as possible.

3. Input impedance of both the VFO and BFO ports should be as low as possible and high to low impedance converters such as a source follower using an FET are best put as close to the VFO and BFO output as possible. Each should be adjacent to the circuit being isolated.

MODIFICATION OF AN RF SPEECH PROCESSOR AS A MONITOR

After the failure mentioned above I found a speech processor which had not been used for quite some time. I decided to modify it for use as a monitor system since the speech processor had very similar circuitry to the monitor that I envisaged. The little device was the Japanese KP12 by TOYOMURA, and its circuit before modification is shown in F.g. 3. The major points of conversion are as follows:—

1. Balanced modulator — Balanced mixer.
2. Mic. amplifier — RF buffer amplifier.
3. Xtal filter — Not used.
4. Limiting amp — Not used.
5. Product detector — Not used.
6. BFO oscillator — Unchanged.
7. Meter amp — AF amp.

The transceiver used with this monitor in my case is an IC710 by ICOM, which is the same as the IC701 export model. Its carrier or BFO frequency is 9.0115 MHz, which is different from the BFO of 10.7015 MHz in the KP12.

As can be seen from Table 1 the IC710 is of single conversion design with a direct VCO and hence the IF after the mixer is constant for all bands from 160 to 10 metres so long as you only need USB. If you need LSB as well an additional BFO oscillator must be put on to an additional printed circuit board. The BFO frequency is exactly the same as in the IC710 itself, USB 9.0130 MHz, LBS 9.0100 MHz. The audio output from the product detector is insufficient to drive a dynamic head phone. The meter driver transistor can be easily modified to give an AF amp which can provide sufficient output. Both the crystal filter and the IC of limiting amplifier are removed since the IF frequency is different and the limiting amplifier would compress the monitor output. The GAIN and OUTPUT control potentiometers become the RF input level control and AF gain control respectively.

TABLE 1

Model	Type	Output Freq. (F)	BFO Freq.
FT101 FT401	Double conv.	Fl — Fv + Fc	Fl + Fc
FT301 FT7	Premix, single conv.	Fl — Fv — Fc	Fl — Fc
FT901	Single conv. PLL VCO	Fv — Fc	Fc
TS520	Double conv.	Fl — Fv — Fc	Fl — Fc
TS820 TS120	Single conv. PLL VCO	Fv — Fc	Fc
KWM-2	Double conv.	Fl — Fv — Fc	Fl — Fc
TR4	Premix, single conv.	3.5 Fc — Fv 7 Fl — Fv — Fc 14 Fc + Fv 21, 28 Fl — Fv — Fc	Fc Fl — Fc Fc Fl — Fc

Fl = Local osc. frequency.
Fv = VFO frequency.
Fc = Carrier osc. frequency.

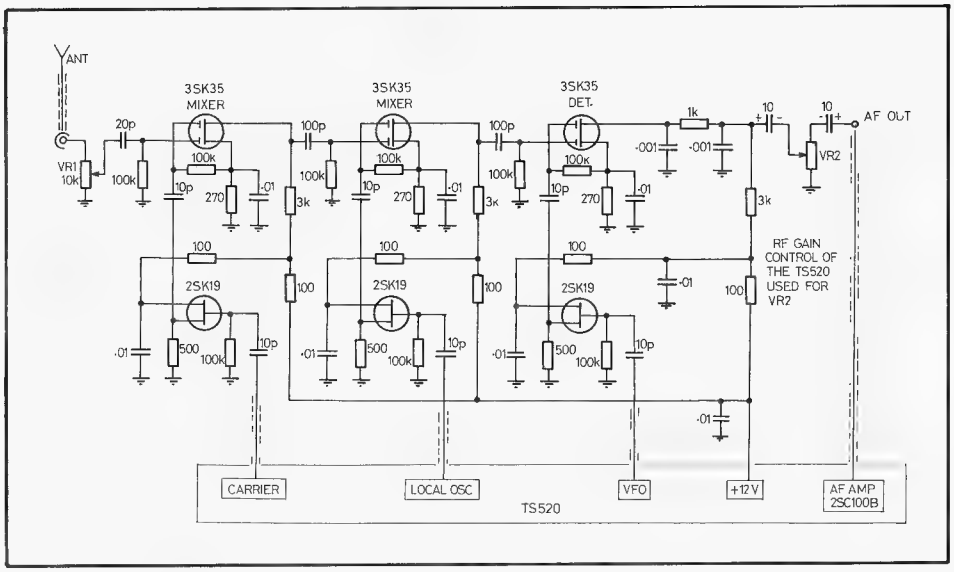


FIGURE 2

I purchased the BFO crystal as a spare part from the service department of the manufacturer. However if your transceiver is not single conversion you must order the crystals you need from a crystal manufacturer. If you require multiple BFO frequencies it would be necessary to add switching relays on a small separate printed circuit board.

The modified circuit is shown in Fig. 4 For the VFO input buffer amplifier I put a 2SK19 FET with associated small parts close to the output high pass filter of VCO in the IC710 as shown in Photo 3. The buffer amp in the transceiver is also shown by the dotted line in the circuit. The VFO, VCO in this case, signals are fed by a small coaxial cable which was the transverter connection originally to the external transverter connector. A relay is necessary to switch from receive to transmit. That is between receiver output from

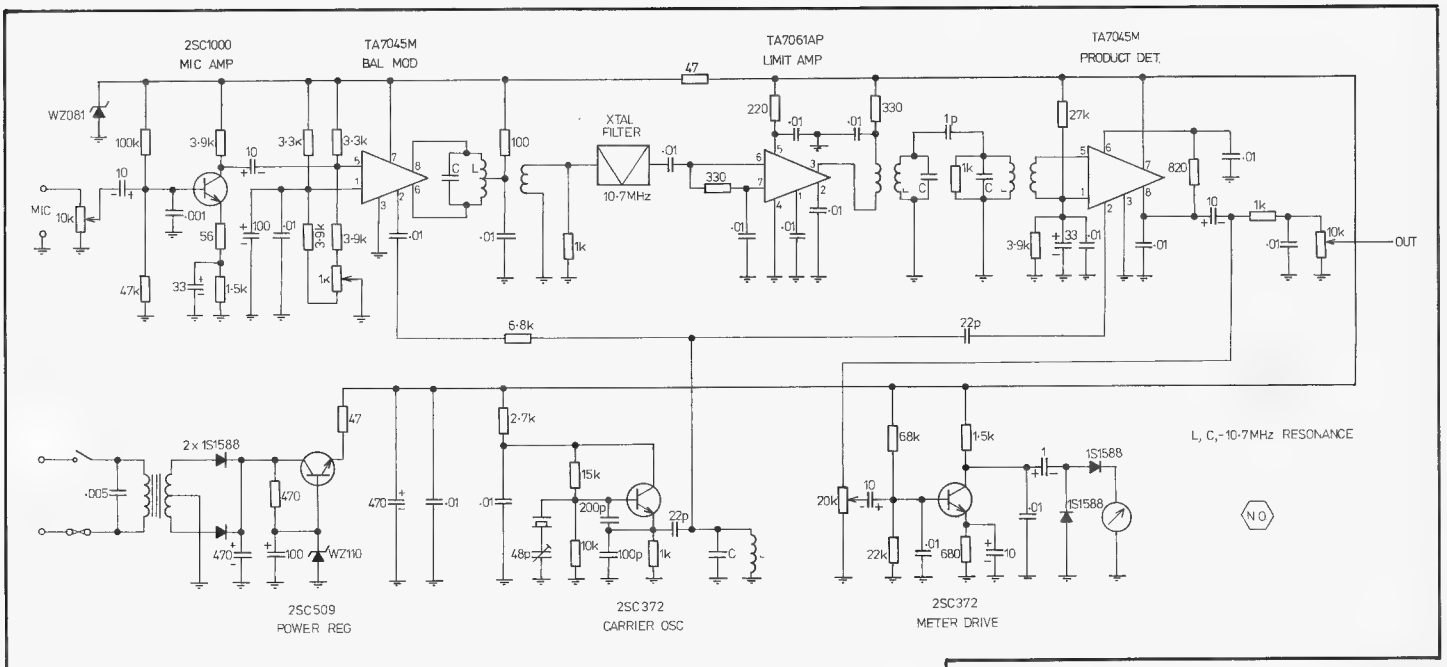


FIGURE 3

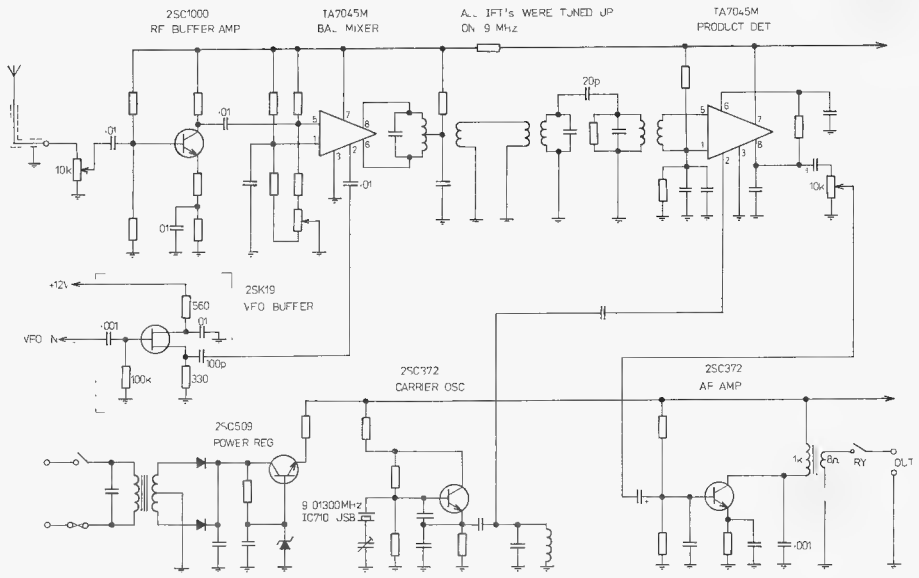


FIGURE 4

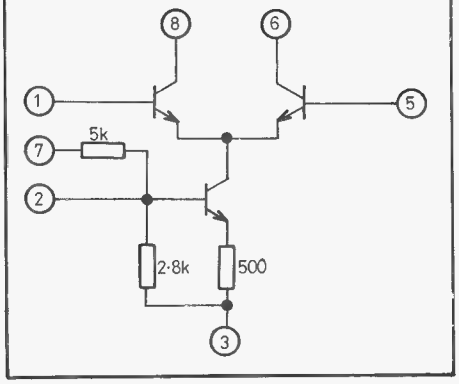


FIGURE 5

the transceiver and monitor output during transmission.

Here I have described the modification of a speech processor type KP12, but any type of speech processor is suitable so long as it is of the RF type. If you plan to build this kind of monitor the example shown here is perhaps not the best way because the IC in the balanced modulator is a so-called differential pair IC which requires a balanced output. The IFT in the KP12 has balanced input and unbalanced output which may be troublesome for a home builder. I recommend that you use a double balanced device like the MC1496G if your project is not the modification of a speech processor. For this reason the modification of the KP12 has some shortcomings for the double conversion application such as the IFT, which has a resonant frequency around 10 MHz and has no provision for multiple BFO oscillators. I will show you another way to minimise these problems.

ANOTHER EXAMPLE FOR HOME BUILDERS

The following is just my design and has not been verified yet by building a prototype. However, all the necessary details for such a system have been included. The mixer is a double balanced IC to cancel straight through leakage. The local oscillator and not the BFO in this case is injected into the mixer instead of the VFO signal as in the previous example. This inverse order makes the IF equal to the frequency of the VFO and an IFT which has a resonant frequency in the VFO range must be used.

The product detector uses the same IC as the KP12 and the equivalent circuit of this IC is shown in Fig. 5. There are some ICs which may be substituted for the TA7045M, such as CA3053, CA3028 or LM301. The same IC as used for the mixer can be quite a good product detector although it requires more external components. The circuit is shown in Fig. 6 and three local oscillators are provided for multi-band use. Of course more oscillators can be provided if necessary.

ADJUSTMENTS ARE AS FOLLOWS

CARRIER SUPPRESSION

Using a general coverage receiver such as a domestic portable radio, tune the frequency of the local oscillator at the output port of the mixer by coupling with a small piece of twisted wire. Adjust VR3, 50K, so as to find minimum carrier leakage. Reduce Rx to reduce injection level if the carrier suppression is poor.

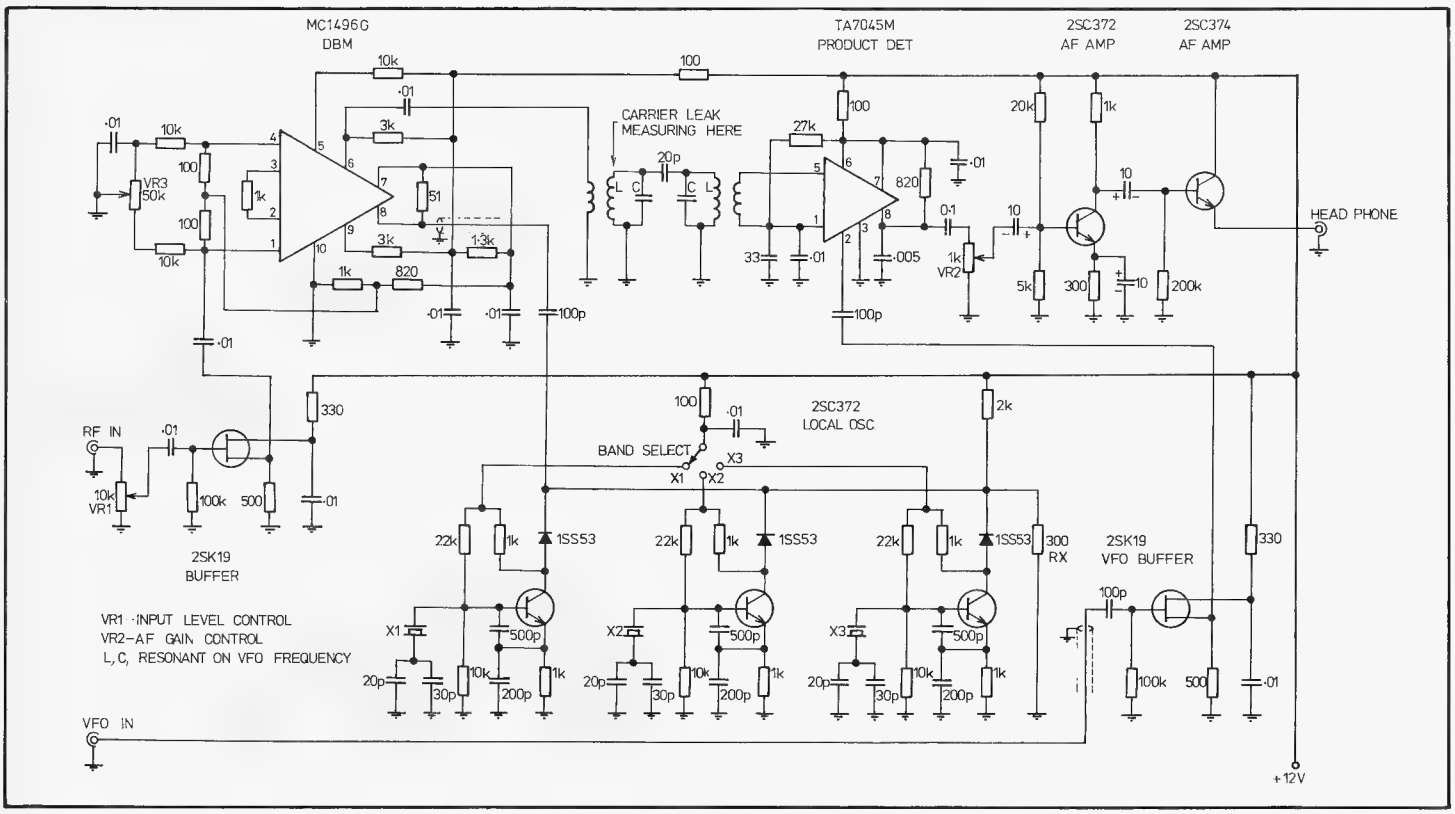


FIGURE 6

FREQUENCY

The adjustment of the frequencies of the local oscillators may be either by using a frequency counter or just listening to the audio quality of a voice coming from the monitor. Just like tuning a normal SSB signal.

RESULTS

With a small wire taped on the surface of the antenna coax cable enough RF input can be obtained to allow you to demodulate the transmitted signal. The volume controls are necessary because the input level changes according to the direction of antenna, bands, SWR on the feed line and the output power level. In other words if a problem develops in the antenna system resulting in a very high SWR the problem will be noticed immediately due to the unusually high input level to the monitor.

On CW the beat is 1500 Hz for both LSB and USB and the monitor becomes a CW monitor. It is almost a year since I put this device into operation. I have come to believe that the monitor described here is of great practical use. In practice it is more useful than a monitorscope since a monitorscope is only effective when you look at the screen. It is an indispensable device for any amateur station to ensure proper operation of the equipment.

I hope that the ideas described here will be useful and will be tried by as many amateurs as possible in Australia. I also hope that it will contribute to building up the habit of listening to one's own signal before transmitting it on the air.

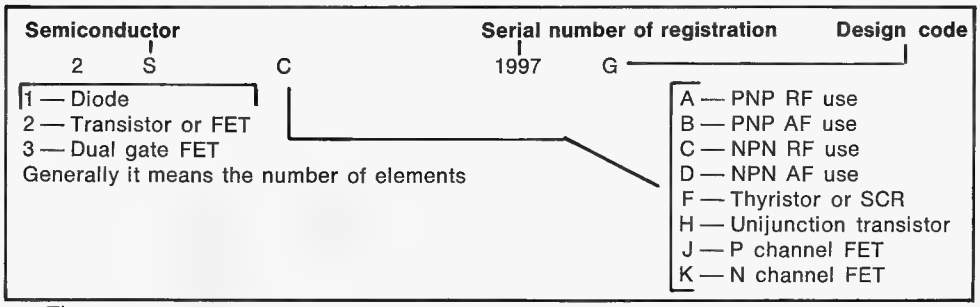
Finally I would like to express my gratitude to Don VK6DY for his assistance with English, and Glen VK6IQ, who gave me the opportunity of reading AR since 1975.

APPENDIX

A lot of Japanese manufactured equipment is in use in Australia as well as in many other countries. However, components like transistors, FETs or ICs with Japanese Type Numbers are not popular in these countries when compared with American components.

The circuits described use Japanese components, but I am afraid that most of them are unfamiliar in Australia. So I think it is worth writing briefly about Japanese semi-conductors.

Japanese diodes, transistors, or FETs are registered with the Electronics Industries Association of Japan and their products are type numbered according to the registration with EIAJ. The codings are as follows:—



There are 35 manufacturers of semiconductor products and more than 4000 types have already been registered.

The 2SC type holds 60 per cent of the 4000 registered type numbers.

I don't know how many transistors are actually available now but there are probably around 1000 type numbers still in production. The latest type number is the order of 2SC2800. If you would like to know more about Japanese transistors or FETs the Japanese Transistor Manual and the FET Manual from CQ Publishing Co., 1-14-2 Sugamo Toyoshima-Ku, Tokyo, Japan, are good guide books. The price is 500 Yen each. As far as ICs are concerned production is by 21 companies, but type numbers are not registered with EIAJ. I cannot tell you how many types of ICs there are but I feel that most of them are supplied to equipment manufacturers of products such as TV, radio, computers or industrial equipment. Around several hundred types are available on the local Japanese market. Generally ICs manufactured in the USA are very popular amongst home builders rather than domestic Japanese ICs. ■

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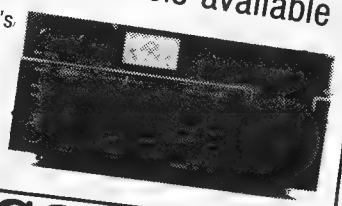

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ICSP2	matching speaker - $56.00
IC2A	2m FM synthesised handheld - $279.00
IC260A	2m FM/ssb 10w mobile - $599.00
IC701	HF solid state 160m-10m transceiver $1199
IC22S	2m FM synthesised transceiver - $299.00 Quantity 5 - 10 — $299.00
IC280	2m FM remotable cpu controlled - $450.00
IC402	70cm ssb portable, 3 watts - $439.00
IC202S	2m ssb portable, 3 watts - $318.00

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HK706	Operator's key - $22.00
MK701	Manipulator (side-swiper) - $45.00

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CN630	Daiwa $140-450MHz, 20/200W direct read $135.00
CN650	Daiwa 1 2 - 2.5GHz, 2/20W, direct read $169
LPM-885	Leader SWR/PWR meter - $89.00
LPM-880	RF Power meter - $135 00
RW-155D	Kuranishi RF Powr meter - $185.00
RW-151D	Kuranishi RF Power meter - $165.00
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VK/ZL/ Oceania DX Contest 1980

NZART and WIA, the national amateur radio associations in New Zealand and Australia, invite world-wide participation in this year's VK/ZL/OCEANIA DX contest.

WHEN?

Phone — 24 hours from 1000 GMT, Saturday, 4th October, to 1000 GMT, Sunday, 5th October.

CW — 24 hours from 1000 GMT, Saturday, 11th October, to 1000 GMT, Sunday, 12th October.

RULES

1. There shall be five main sections in the contest:—
   (a) transmitting phone, open.
   (b) transmitting CW, open.
   (c) receiving, "phone and CW" combined.
   For VK and ZL only — QRP sections, 5 watts argonaut rating.
   (d) transmitting phone, QRP.
   (e) transmitting CW, QRP.
2. The contest is open to all licensed transmitting stations in any part of the world. No prior entry need be made. Mobile marine and other non-land based stations are permitted to enter. Their "country status" will be determined by the country which issued the call sign used in the contest.
3. All amateur bands may be used but no cross band operation is permitted. *Note:* VK and ZL stations, irrespective of their location, *do not* contact each other for contest purposes *except* on 80 and 160 metres on which bands contacts between VK and ZL stations are encouraged.
4. Phone will be used during the first weekend and CW during the second weekend. Stations entering both sections must submit separate logs.
5. Only one contact on CW and one contact on phone per band is permitted with any other station for scoring purposes.
6. Only one licensed amateur is permitted to operate any one station under the owner's call sign. Should two or more operate any particular station, each will be considered a competitor and must submit a separate log under his own call sign. This is not applicable to overseas competitors operating club stations.
7. Entrants must operate within the terms of their licences.

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8. **CYPHERS**

Before points can be claimed for a contact, serial numbers must be exchanged and *acknowledged.* The serial number of five or six figures will be made up of the RS (phone) or RST (CW) report plus three figures which may begin with any number between 001 and 100 for the first contact and which will increase in value by one for each successive contact, e.g. if the number chosen for the first contact is 021, then the second must be 022, followed by 023, 024, etc. After reaching 999, restart from 001.

9. **SCORING**

(a) **For Oceania Stations other than VK/ZL**

2 points for each contact on a specific band with VK/ZL stations and 1 point for each contact on a specific band with the rest of the world.

(b) **For the rest of the world other than VK/ZL**

2 points for each contact on a specific band with VK/ZL stations and 1 point for each contact on a specific band with Oceania stations other than VK/ZL.

(c) **For VK/ZL stations**

Points for each QSO on different bands as follows: 20m, 1 point; 15m, 2 points; 10m, 3 points; 40m, 5 points; 80m, 10 points; 160m, 20 points. Score for *each band* will be the total points score for that band multiplied by the total prefixes worked on that band. Final "all band" score is the *sum* of the different band scores.

Note: W1, K1, WA1, WN1, A1, N1 (although all in the same call area) are different prefixes and count as multipliers. W6AA/1 is same as above and counts as a "W1" and not "W6".

(d) **80 metre section**

For 80 metre contacts between VK and ZL stations, each VK and ZL call area will be considered a "scoring area" with each contact counting 10 points. Each different call area will count as a multiplier.

(e) **160 metre section**

Contacts permissible between VK/ZL, VK/VK, ZL/ZL, as well as VK/ZL to the rest of the world. Each VK and ZL call area will count as a "scoring area" with each contact counting 20 points. Each different call area will count as a multiplier.

Note: A contestant may claim points for contacts with other stations in the *same* call area for this 160 metre section.

10. **LOGS**

(a) **Overseas stations**

(1) Logs to show in this order — date, time in GMT, call sign of station contacted, band, serial number sent, serial number received. *Underline* each new VK/ZL call area contacted. Separate log must be submitted for each band used.

(2) Summary sheet to show call sign, name and address in *block letters*; details of equipment used; and, for *each band,* QSO points for that band—VK/ZL call areas worked on that band.

"Single band" score will be QSO points for that band multiplied by total VK/ZL call areas worked on that band.

"All band" score will be total QSO points for all bands multiplied by total VK/ZL call areas worked on all bands.

(b) **VK/ZL stations**

(1) Logs must show in this order — date, time in GMT, call sign of station worked, band, serial number sent, serial number received. *Use separate log for each band.*

(2) Summary sheet to show name and address in block letters, call sign, for *each band* — QSO points for that band. *"All band"* score will be total of single band scores. Give details of equipment used and declaration that all rules and regulations have been observed.

11. The right is reserved to disqualify any entrant who, during the contest, has not strictly observed regulations or who has consistently departed from the accepted code of operating ethics.

12. The ruling of the Executive Council NZART will be final.

13. **AWARDS**

Separate awards for phone and for CW.

World-wide except VK/ZL

(a) Attractive multi-colour certificates to the top scorers in each country (call areas in "W", "J", "U").

(b) Depending on reasonable degree of activity, separate awards may be made for top scores on different bands.

(c) Where many logs are received, consideration will be given to awarding second and third place certificates.

To VK and ZL stations — Certificates

Open section

Certificates —

(a) To top three scorers in each call area VK/ZL.

(b) To top three scorers on individual bands (160, 80, 40, 20, 15, 10) in VK and in ZL.

QRP section

(a) Top three scorers in VK and in ZL.

(b) Others depending on activity.

14. **ENTRIES**

From VK/ZL stations should be posted direct to:

NZART Contest Manager, ZL2GX,
152 Lytton Road,
Gisborne, New Zealand,

to arrive before 31st December, 1981.

From overseas stations to be posted to the above address or to Headquarters, Box 1459, Christchurch, to arrive not later than 31 January 1981.

SWL SECTION

1. The rules are similar to the transmitting section but is is open to all members of any SWL Society in the world. No transmitting station is permitted to enter this section.
2. The contest times and logging of stations on each band per weekend are as for the transmitting section except that the same station may be logged twice on any band — *once on phone and once on CW.*
3. To count for points, the station heard must be in QSO exchanging cyphers in the VK/ZL/Oceania DX contest and the following details noted — date, time in GMT, call of the station heard, call of the station he is working, RS(T) of the station heard, serial number *sent* by the station heard, band, points claimed.
4. Scoring is on the same basis as for the transmitting section and a summary sheet should be similarly set out.
5. Overseas stations may log *only* VK/ZL stations, but VK receiving stations may log overseas stations and ZL stations, while ZL receiving stations may log overseas stations and VK stations.
6. Certificates will be awarded as listed in the section under awards. ■

QSP

DXCC

According to January 1980 QST there are now 319 countries on the DXCC list. Because of deletions, etc., over the years there are more than this in total. In the listings two US amateurs (W6AM and W9BG) top the mixed CW/phone section with 365, and one (W6AM) tops the phone section with 363. In the mixed section VK4QM has 362 countries and VK3YL has 331 — no others from the 300 level. In the phone section VK5MS has 353, VK4QM has 338 and VK6LK with 302 are the only three to top the 300 mark. How about our own DXCC someone asks. Over to you Bill — VK5WV. ■

10 to 30 MHz ANTENNA

A few years hence amateurs will begin thinking how they could use one aerial to cover all the six amateur bands from 10 to 30 MHz. You could certainly play with ideas for a practical multi-band rotatable yagi or think about a nine element log periodic on an 18m long boom.—Ham Radio, January 1980. ■

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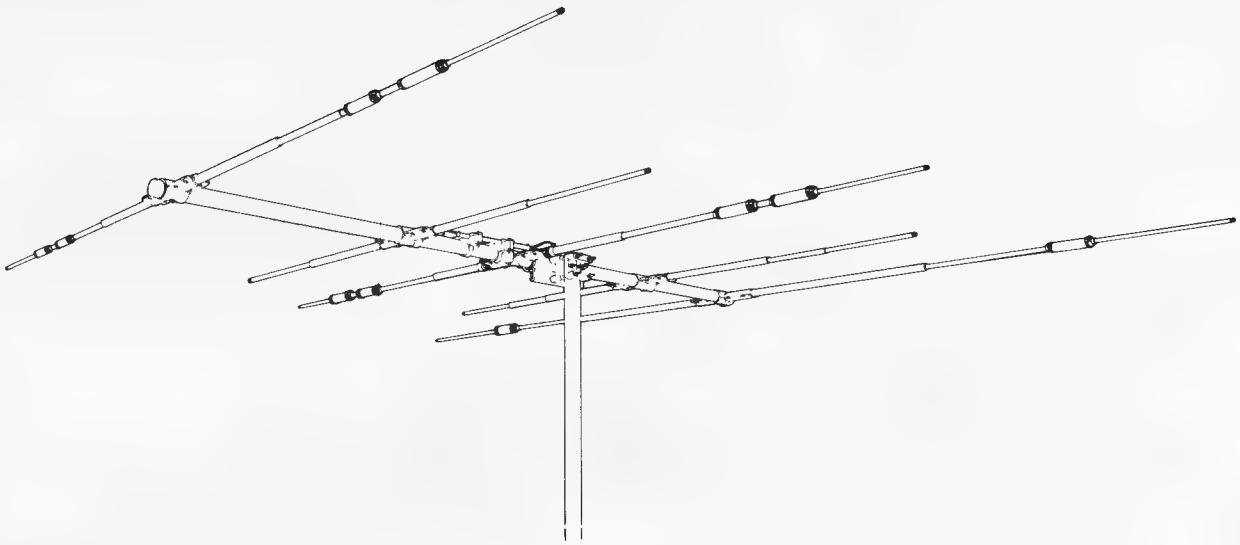
DIVISION OF TELEX COMMUNICATIONS, INC

TH5DX
10-15-20 METERS



We are proud to introduce the newest member of our famous Thunderbird line of Tri-Band antennas. The TH5DX offers outstanding performance on 20, 15 and 10 meters. It features 5 elements on an 18 foot boom, with 3 active elements on 15 and 20 meters and 4 active elements on 10 meters. The TH5DX also features separate air-dielectric Hy-Q traps for each band. This allows the TH5DX to be set for the maximum F/B ratio and the minimum beam width possible for a Tri-Band antenna of this size. Also standard on this antenna are Hy-Gain's unique Beta-match, rugged Boom-to-mast bracket, taper-swaged elements and improved element compression clamps.

Boom length	18 feet	VSWR at resonance	less than 1.5:1
Longest Element	31 feet	Power Input	Maximum Legal
Turning Radius	18 feet	Input Impedance	50 ohms
Surface Area	6.4 sq. feet	−3dB Beamwidth	66° average
Wind load	164 lbs	Lightning Protection	DC ground
Weight	50 lbs	Forward Gain	8.5dB
		Front-to-Back Ratio	25 dB

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The Mirage B108 2m Amplifier and DSI5500 Frequency Counter

Mirage B108 2m Amplifier

It has a built-in receive pre-amplifier (10 dB), variable SSB delay and remote keying capability.

Complete remote control is available as an accessory when using the optional remote head (RE-1).

It will amplify FM, SSB and CW signals to nominally 80 watts with approximately 10 watts drive.

The heart of the amplifier is the Motorola MRF 247, which is mounted on a large heat sink and covers the entire case. Size is 5½ in. x 3 in. x 8 in., weight 1.5 kg.

The unit itself is rugged, neat and compact. Microstripline circuity is extensively used and the amplifier operates from the usual rectified RF sampling and relay switching method. The circuitry is basic and contains diode DC protection for accidental reverse polarity connection — a most important requirement for all solid state equipment.

Power requirements are 13.6V DC at 10-12 amps. The amplifier and receiver pre-amplifier are operated independently of each other, with switching on the front panel.

The amplifier is designed to work into a load of 50 ohms, but will still operate at reduced power with a high SWR.

The Mirage B108 2 metre amplifier is the latest power amplifier to come out of the United States for sale on the Australian market.

ON-AIR TESTING

The unit was tested at a base station installation using a Kenwood TS700A all mode transceiver as the driver. The TS700A output is 12 watts FM and 14 watts PEP SSB. The antenna used was a AR2X ringo mounted at 50 feet and a Heathkit "Cantenna" dummy load together with a Yaesu in-line power meter.

The reviewer was looking basically for reliability from an operator's point of view, as exclusive test equipment such as a spectrum analyser was not available at the time the tests were made.

With 12 watts FM drive from the TS700A, the amplifier registered approximately 80 watts output to the antenna.

Several weak stations were worked simplex and the general consensus of those worked gave the amplifier a good report.

On FM, the receive pre-amplifier proved effective on weak and noisy signals. Some signals just opening the mute were brought up to a good readability, although full quieting was not attained as the limiters in the receiver were not saturated.

Noisy but readable signals brought the receiver to full quieting.

Similar receive tests on SSB also proved very effective, particularly on Oscar 7, Mode B, where reception was brought to readability 5 from a just detectable signal.

The unit tested met the published specifications, and it was with reluctance that the amplifier was returned to the distributor.

Due to its ruggedness, the distributors are confident that little can be done to damage the unit. To back up this claim, a 5-year parts and labour warranty is made for the unit, excluding the final transistor, which carries a 1-year warranty.

At the review date the price is $229 with an extra $30 for the RC-1 remote control head.

Enquiries for supply should be made to the distributors, ATN Antennas, Box 80, Birchip, Victoria 3483.

Many thanks to Eric Buggee VK3ZZN for assistance with the tests and use of his test equipment.—(VK3UV.) ■

DSI5500 512MHz Frequency Counter

This counter from DSI (United States) is one of several available from the same manufacturer, but we chose it specially for review mainly because of its size and cost, and to see if it would come up to the quoted specifications.

The counter will fit into the palm of your hand, has eight easy to read LED digits, covers from 50 Hz to 512 MHz at very good

sensitivity varying from 10-50 mV. The temperature controlled crystal oscillator holds an accuracy of 1 PPM from 17°C to 40°C.

The 5500 is able to resolve 1 Hz from 50 Hz to 50 MHz, and 10 Hz from 50 MHz to 500 MHz.

The sensitivity and compactness of the 5500 enables this unit to operate from all situations.

Power requirements are 8.2-14.5V DC, and it will operate from an optional rechargeable Nicad battery pack or 240V AC using a 9V adapter.

A BNC socket is provided for input signals, and a 12 in. telescopic antenna with BNC connector attached is available for readings on air.

ON TEST

To gauge sensitivity over distance, a 10 watt 2m FM mobile gave a stable reading at a little under 100 feet, and a one watt 2m FM hand-held transceiver gave full lock at 30 feet.

With the assistance of Eric Buggee VK3ZZN and the use of his extensive test equipment, the following results were obtained for comparison to the specifications.

100 Hz-25 MHz specifications are 10-15 mV sensitivity.

Our tests showed that from 20 Hz-100 kHz, levels of drive in this audio range required the locking varied from 1.5V to 50 mV up to 50 kHz.

Specifications were reached at 100 kHz where a level of only 4 mV was required to lock. From 100 kHz to 25 MHz, an average of 8 mV gave full lock.

Apart from the low audio range, the unit under test was well within the specifications published.

The limit of the signal generator was 503 MHz, and at this frequency the counter was still locking in at around 85 mV. We have no doubts whatever that the frequency of 512 MHz as specified would have been reached and possibly even higher had we possessed a generator at this range.

SUMMING UP

From the tests made, the DSI 5500 is most suitable for amateur use, and its portability enables it to be used either in the shack or field.

We compliment the manufacturers on engineering such a compact and neat frequency counter.

It comes with a limited 1-year warranty and the greatest surprise is the price. At the time of writing the cost is $150 for the fully wired and tested unit itself, and the optional extras of Nicad battery pack, AC adapter and BNC antenna total $45.

This represents excellent value for its performance against counters costing nearly three times the price.

Enquiries regarding supply and delivery should be made to ATN Antennas, Box 80, Birchip, Vic. 3483, from whom the test unit was made available.

Many thanks to Eric VK3ZZN for the use of his equipment in making the tests possible.—(VK3UV.) ■

PHOTO 1:
John Payne (l), Victorian WICEN Co-Ordinator, accepting the G24 from the director of Scalar Industries, Frank Welsh VK3BPV (r.).

WICEN in Victoria

During November last year WICEN again provided communications for the International Alpine Car Rally. The WICEN portable two metre repeater was installed on Mt. Stanley (near Beechworth). The repeater provided the communication over the rally route from Bright-Porepunkah to Wodonga-Shelley.

WICEN Victoria would like to thank Scalar Industries for the donation of a G24 omni-directional 3 dB gain aerial for the repeater and the loan of an AR 240 2 FM walkie talkie from Vicom.

The G24 was also put to good use for the regular WICEN exercise over Christmas and New Year at the Red Cross Canoe Marathon. ■

PHOTO 2:
Peter VK3ZPP using the AR240 on top of Mt. Stanley during the exercise.

QRP CW — Let's give it a Shot in the Arm!

J. Swiney VK6JS
59 Collova Way, Wattleup, WA 6166.

There has been an increasing trend in countries overseas in the last few years towards low-power CW operation by amateurs who are seriously interested in the study of radio propagation and antennae experimentation and it suddenly struck me that there was a possibility of similar interests here in Australia.

Listening around the bands and operating occasionally in the CW mode at less than 5 watts output I re-discovered the joys and frustrations that our early amateur pioneers must have experienced in their normal endeavours.

Of course things have come a long way since the "good ol' days" and the advancement of amateur radio communication techniques since then would stagger their imaginations.

Now most of us, whether OTs or newcomers, will have read or heard that last statement at some time or other and might ask what this is all leading up to. Sure, those early experimenters battled with low-power and CW, you say, but all that is in the past and amateur radio today is doing very nicely, thank you.

And that's precisely the point! Have we forgotten, or do we tend to ignore, the very foundations upon which this great hobby of ours was built?

After some serious thought and a few cross-sectional enquiries it was revealed that there was a strong possibility of a good reaction amongst amateurs generally in experimenting with periodical low-power CW operation providing there was some tangible evidence for their efforts. Consequently I have formulated a proposal for the creation of a "VK CW QRPp CLUB" and some brief details follow.

The basic aims of the Club, as mentioned earlier, are to encourage the challenge of working with very low-power and thereby promote the study of radio propagation and antennae experimentation. Throw in a goodly handful of sheer fun and you have the recipe for some real moments of truth and severe tests of one's patience!

When the idea of this project finally germinated, the problem of evaluating formulae for some method of Club point scoring raised its ugly head. Much published literature on radio propagation and its effect on low-power operation was studied and digested. The object in mind was to keep any final decision to basic simplicity and we finally devised a formula which would be an equaliser for low-power/short distance and high-power/long distance. "High power" in this instance being a whopping big 5 watts!

The square root of the distance between stations (in kilometres) divided by the square of peak output power (in watts) into the antenna was chosen to be the solution. Sounds complicated, I'll admit, but when the equation is written mathematically, as shown below, it looks a lot better!

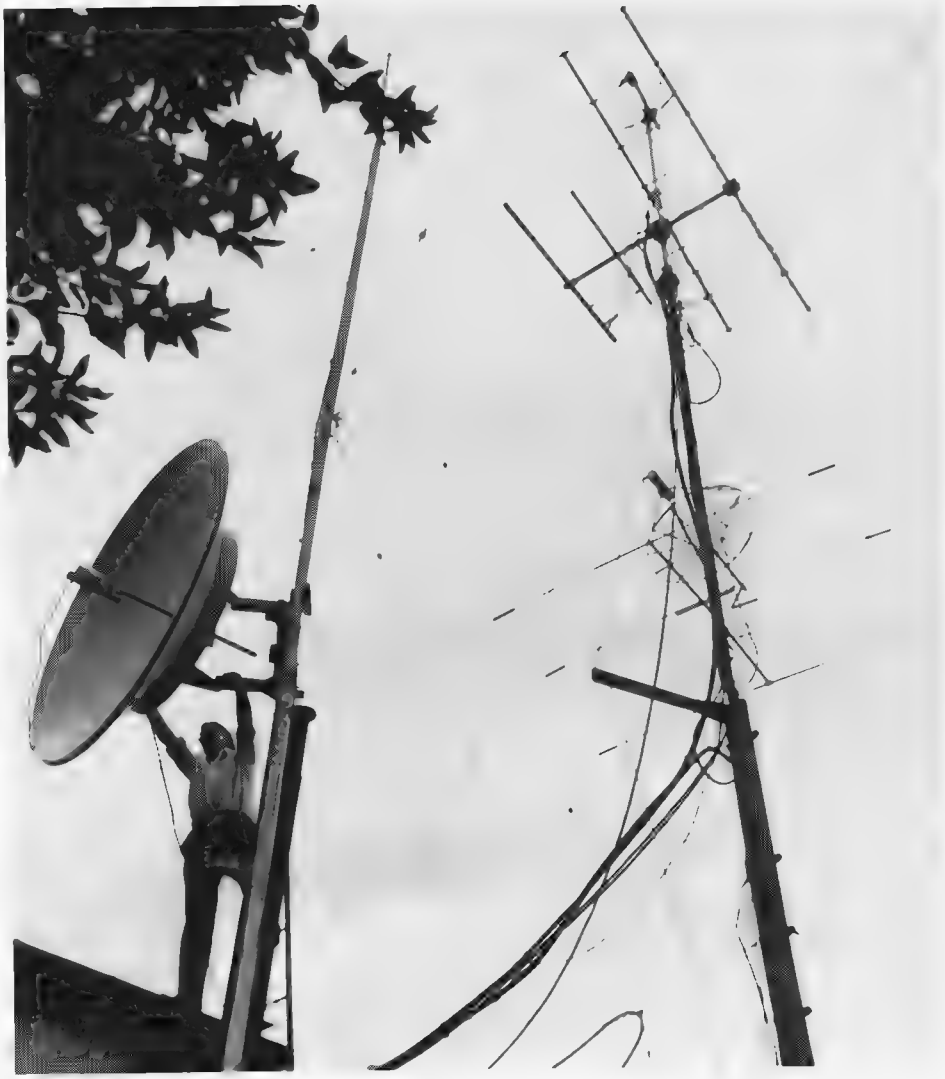

PHOTO 1:
The QRP'ers main weapons, efficient and well-constructed antenna systems — well, maybe one system, in some cases perhaps a wire?

$$\text{No. of points} = \frac{D\ (km)}{P^2\ (watts)}$$

D = Distance between stations as measured in accordance with the Club rules.

P = Indicated watts of peak output power into the antenna as required by the Club rules.

Having decided that we now had the essentials for a good prospective reaction among amateurs in VK, we proceeded to draft a letter for mailing to numerous CW operators who we considered might be interested in the idea. The results were favourable and encouraging and, at last, the "VK CW QRPp CLUB" was off the ground!

I must point out, at this stage, that the scope of the Club will encompass CW QRPp operation within the confines of the Australian Commonwealth only and QSOs with overseas stations whilst transmitting very low power will not be valid for Club point scoring but will, nevertheless, be of great interest to all and would obligate a mention in our monthly newsletter.

Increased membership for any venture of this kind is always being sought and, naturally, we are no different. If the idea intrigues you or you are a serious QRPer please drop us a line at the above address and we will mail you complete details.

One other interesting aspect of CW QRPing not mentioned earlier is home-brew construction of transmitters. I believe there's just as much excitement when making your first QRP contact via your own matchbox transmitter which was put together, and perhaps even self-designed, with tender loving care as there is in catching that first rare country on high power!

So there we have it . . . CW QRP and all the joys and frustrations attached to it. Have a go and you'll be surprised! But let me warn you . . . it's not easy; be prepared to call CQ till your patience is stretched to the limit. However, I reckon if you use the suffix /QRP after your call sign you will identify your intentions on air and get a good response.

It's not a new idea but a revival! I'll be watching out for you on CW QRP!

OPERATING RULES FOR THE VK CW QRPp CLUB

1. All amateur stations holding a current VK call sign are eligible to gain membership.

   The aims of the Club are to encourage the challenge of working with very low power and thereby promote the study of radio propagation and antennae exprimentation.

   A nominal fee of $1 will apply for initial membership on application to the QRPp Club but admittance to full associateship will only be granted on the accrual of 20 (twenty) points or more.

2. A1 mode (CW) *only* will be used and peak output into the antenna will NOT exceed 5 (five) watts.
   Power levels will be determined by methods or calculations by each individual station that give an accurate assessment of output. The historical "honour system" will be sufficient.

3. Point scoring will be based on the formula:

$$\text{No. points} = \frac{\text{Distance between stations (km)}}{\text{Power}^2\ (watts)}$$

   and rounded off to one figure after the decimal point.

4. All authorised amateur bands are permitted to be used and each member will be credited on the Club listings with a total points accumulation plus a breakdown of points gained on each band.
   Only contacts made on or after zero hours GMT 1st January, 1980, will be valid.
   Contacts with any one station may be made *twice daily* per calendar month on each band for the purpose of point scoring.
   Note: Stations worked do *not* need to be QRP.

5. Minimum exchange of reports will not be *less* than RST 328. Readability 3 (three), Strength 2 (two) and Tone 8 (eight). (Example: A 519 report will NOT be sufficient.)

6. The Australian Map No. 150 printed and published by Gregory's Guides and Maps Pty. Ltd., 142 Clarence Street, Sydney 2000, will be considered the standard reference for the measurement of distance in the formula. Distance to contacted stations in proximity (100 km or less) may be assessed from any local accurate road map.

7. Minimum acceptable distance for point scoring will not be LESS than 25 (twenty-five) kilometres.

8. Cross-mode or cross-band contacts are not admissible. QSOs established during contests will only be accepted PROVIDING all the rules of the Club have been adhered to and the claimed contact has submitted an admissible contest log as shown in the published results.
   Mobile or portable operation (transmitting or receiving) will be considered as VALID contacts.

9. QSL cards are not required to be produced as proof of valid contacts; log extracts will be accepted with a simple signed declaration that the station has been operated within the limitations of the licensing regulations as applicable to its operation.

10. Essential information required will include call sign of station worked, his location, band (MHz), date and time (GMT), RST received, RST given, power output (watts), estimated distance and points scored.
    Note: If last two requirements are not readily calculable, QRPp headquarters will enter this information on to the application. ■

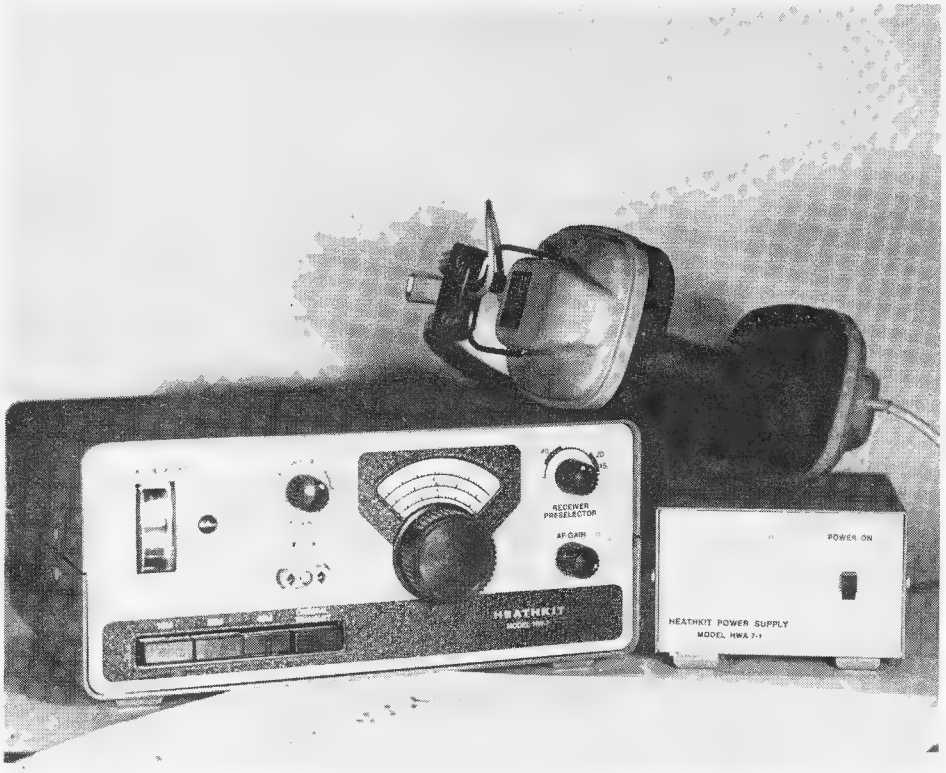

PHOTO 2:
One of the popular QRP rigs — the HW7 now superseded by the HW8.

Amateur Radio and the Public

Sam Voron VK2BVS
2 Griffith Ave., East Roseville, NSW 2069.
Phone (02) 407 1066 (between 6-9 p.m.)

The Amateur and Citizens Radio (VKCB) Club of NSW has designated 1980 as the fun year.

In the last three years amateur radio has relied on the tremendous interest caused by CB to generate the rapid growth in Australian amateur radio. The current drop in newcomers into CB is reflected in the diminished numbers sitting for the amateur licence.

The loss of momentum which CB had in bringing amateur radio to the attention of many new people means that amateurs now need to directly create the interest which will attract newcomers to our hobby. Throughout the year the Amateur and Citzens Radio Club will be planning many displays and radio patrols which will bring amateur radio to the people.

Already the Club has been active.

1980 started with hand-held 27 MHz AM and 147 MHz FM walkie talkies being used as members circulated among the crowd of sixty thousand at the Sydney Opera House New Year's eve pop concert.

With bright green "glowing" cyalume chemical lights affixed to the top of whip antennae, Club members made an impressive sight as night fell.

The second 1980 project was the display at Fitzroy Gardens, Kings Cross. The Sydney City Council granted the Club approval to conduct the display over two weekends.

PHOTO 1
Five element 10 metre beam being constructed in the middle of the park. From right to left we have John VK2ZBA, Chris VK2NYA and Peter VK2NVA.

PHOTO 2
The WIA being promoted by Club members.

PHOTO 3
The amateur radio reports broadcast at midnight, 1 and 2 a.m., publicised the display over commercial radio for two weeks leading up to the event.

1980 project No. 3 was the display at the Manly shopping centre. Manly Council approved to Club application within two weeks, giving us access to this popular northern suburb beach-side shopping area.

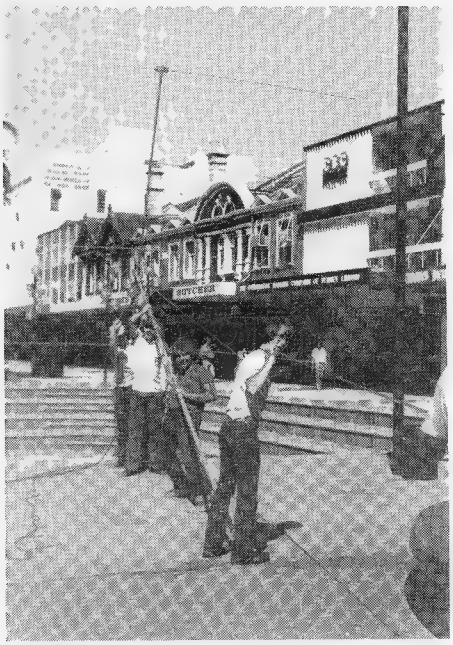

PHOTO 4
Up goes Peter's VK2NVA 5 element 10 metre beam.

PHOTO 5
The beam mast in a bucket of beach sand, then comes the water to harden the base, which is a plastic garbage bin.

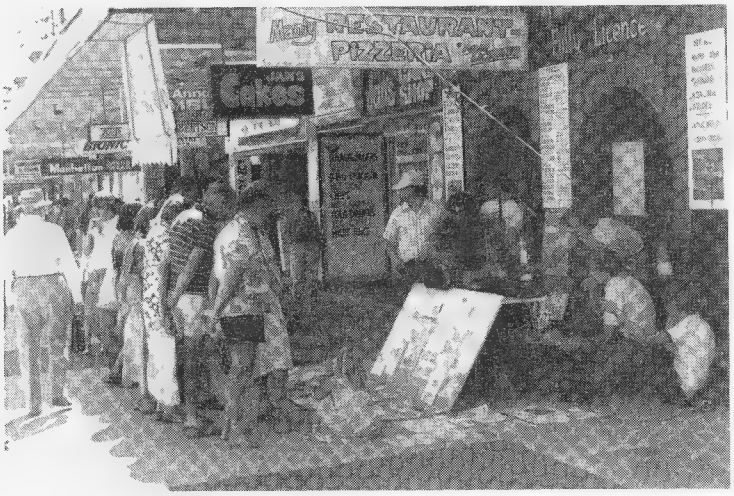

PHOTO 6
The public show a big interest in a well set up, diverse, active and accessible open air display.

Project number 4 was a radio patrol in Sydney's "Moomba" festival. The Club joined a hundred thousand who jammed the main streets of the city to take part in this fun procession.

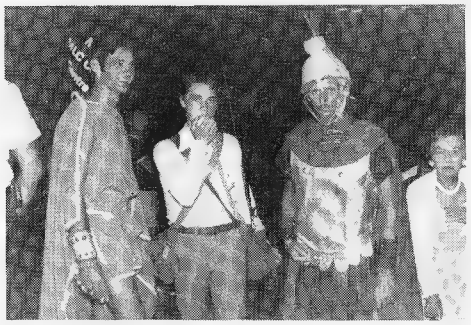

PHOTO 7
Martin operating 160 metres hand-held pedestrian under supervision meets two Roman officers in Sydney's procession of the year. ■

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WIA Call Book	2.45	250
WIA Log Book	2.50	220

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NOVICE NOTES

BIT OF PSYCHOLOGY

Believe it or not, but hams are only human! So next time you're launching your very best CQ calls and a purposeful knock comes at the front door, don't be too ashamed of that hunted look that springs to your eyes and those little warning lights that flash "TVI" and "BCI" through your brain. Oh yes — your rig just bristles with suppressors; you boast the biggest Faraday screen east of the Rockies; and you've tucked a trim little wavetrap into every aerial for miles around. But don't dare rest content till you've learnt how to act when that inspired "CQ" has burst bodily through all your protective barriers and the XYL is calling "Darling . . . there's a man at the door and he's asking about your broadcasting!" Then it is, OM, that a little applied psychology can come to your aid. Remember, your only hope is to convince the complainant that the reins of science are held firmly in your grasp and that every microwatt that has ever jumped off your aerial has winged its way unswervingly along the path of progress. Here's what to do . . .

Greet your neighbour at the door with an expression of intense, unsmiling wisdom. Wring his hand to the point where he is about to sue for peace and lead him straightway to the shack, uttering not a word. Once inside your den, of course, he's at your mercy. Soften him up! Fire up the rig without delay, switch on the carrier, and nonchalantly dangle your trusty bulb and loop as near to the PA tank as personal safety and your nerves permit. Idly strike neons in the most unexpected places, and slyly observe his reactions. Now all this may seem very naive to you but few of the uninitiated can withstand the lure of lamps illuminated by unseen hands, and your victim will be no exception. His eyes will widen with childlike wonderment, his lips will tremble at HF, and the softening-up process will be well under way. Just for good measure, draw a sizable spark from the aerial, hand him the screwdriver and invite him to do the same. Quick now! — you must thwart his endeavours to bolt for the door . . . and promptly turn his attention to the receiver. With AF and RF gains wide open, swing to and fro over 7 MC. (See now why this band is called the Roaring Forties?) QRM? QRN? Don't let them worry you. It's noise that counts, and the more of it the better. Human powers of resistance are normally such that three minutes of this treatment will implant a frightening fixed grin upon the visitor's features and bring you a fervent apology for having been troubled.

If it fails — One final measure remains, only to be resorted to in the most troublesome cases. So you break in on his Brahms? So the TV picture of bird-life in Outer Mongolia are accompanied by a voice that no bird ever owned? Very well! Announce firmly your intentions of popping round to look over his set and then, with awful deliberation, proceed to pack your tool kit. Hack-saw? Yes, you'll need that. Four pound hammer? Of course! Cold chisel! In it goes! Add a meter or two if you must but these are uncalled for embellishments. Then stride with shining eyes towards the door. See? Your problem is solved. Your visitor has fled to protect his domain. That diplomatic cup of tea the XYL thought of just won't be needed now. Relax, OM, and drink it yourself — and get after Zone 23 again!

By F. Hennig G8SW, from "The Lyrebird". ■

MORSE EXAMS

Candidates for morse exams are specially reminded that the morse sending or receiving of letters is not adequate in itself. There is a space of 7 dots between words and this has to be observed so that whatever is sent or written down should be in understandable composition English. Thus, to omit a space between two words is one error. Many errors could be recorded against you if, for example, in receiving morse, you write down a string of letters not separated into discrete words. This reminder is given to dispel any rumours to the contrary and to alert candidates to the official requirements. ■

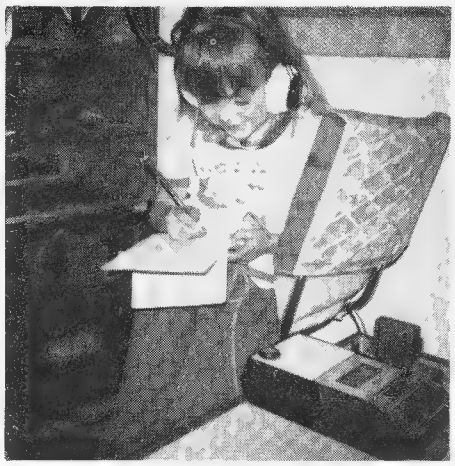
Start 'em young is the motto in VK2, where one such young participant in amateur radio is four-year-old Cherrie, granddaughter of Nev VKZBQ and Daphne VK2NXD. Cherrie is a keen future CW operator and is pictured brushing up on her CW (at right).

Triple trouble for those who confuse call signs, from left to right: Wally VK6NCL from Geraldton in WA, Carol VK2NCL from Tamworth, NSW, and last but not least Ian VK1NCL from Canberra (below).

GRADUATES

Below in a sea of faces are Graham Scott VK3ZR and some of those who have been successful in classes held at the Box Hill Technical College in Melbourne. The photograph was taken on an outing to Radio Australia VNG Lyndhurst, and all attending enjoyed the outing. Rumour has it that VNG were missing an antenna or two but this was not confirmed, and VNG are still on the air anyway!!!!! ■

From l. to r.: Allan VK3VAT, Les L31187, Chris VK3NFC, Peter VK3VBA (now also VK3YPV), Geoff VK3NWW, Rod VK3NXS, Graham VK3ZR, Stevo (ex VK3VGK) VK3BXX, and David VK3VBE.



LISTENING AROUND

With Joe VK2NIM

(From "Flux", September and October '79)

There's no doubt about the fact that, as Jack VK3NTR says, "8" is the "friendly band".

I first listended to "80" almost 30 years ago when everyone was using Ancient Modulation and anyone with a shortwave set could hear "80" without the dooverometer called a BFO, which now must be used to make "duck talk" intelligible to today's SWL listener, and when almost every amateur sported his own home brew rack and panel transmitter with its many dials, knobs and switches. I hear talk these days of so-called "appliance operators" who have everything ready made, but even for these I think there are many areas for experimentation with various types of antennas, ATUs, pre-amps, to name but a few areas where even "appliance operators" could still find things to build.

I marvel at the variety of occupations of the rag chewers I meet on 80. A few weeks ago I spoke with a member of the Law Reform Council at Boroko, a suburb of Port Moresby (P29KC). A day or two ago I spoke with a worker at a piggery farm at Kadina, South Australia, who said he was covered in dust and very smelly and had 17,000 gallons of pig manure not far from his transmitter. (I wonder if he's thinking of manufacturing methane — perhaps to power his rig in these days of the looming energy crisis!) And last night I was speaking with a very happy-go-lucky boiler attendant at the Morwell power house who didn't seem to have even heard of the energy crisis. Shane, aged 21, is also required to sweep the floors in the boiler house. He's proud of Traralgon where he lives and where electricity is produced in bulk.

There are several railway workers whom I often talk to. Jack VK3NTR, "No Trains Running", is a diesel-electric locomotive driver from Ararat, as is also Greg VK3BRU from Donald. Ewart Jowett VK2BEJ from Doon-Doon in the Tweed Valley is an ex-Melbourne-ite who quit Melbourne 26 years ago "to go banana bending" and says that he won't ever go back to Melbourne. He's worked in this Sunrayasia area also and knows the Bailey family (friends of mine at Gol Gol). Jeff VK5OX is an ex airline pilot who has had much experience of flying in Europe, and VK5FF (Robert from Hungary) works with forensic science in Adelaide. Neville VK5NNT from Port Lincoln works for Telecom on telephone installation and repair, and also seems to be involved with the installation of radio navigation equipment on fishing boats. There's a doctor — a Surgeon Commander in Canberra — who can be heard on a weekly marine operator's net (people associated with coastal radio), and I have regular contact with a young scientist who photographs the Milky Way through the optical telescopes at Siding Springs, near Coonabarabran.

It's certainly a mixed bag on 80! ■

Had a QSO with Joan VK3NLO at Bendigo the other night and her OM, Graeme, who has a call sign of his own. Graeme says that he has happy memories of his 1960-66 stint in Mildura at the High Ball launching site at the aerodrome. He remembers amateurs like Vern Macey, then manager of the Irymple Community Hotel, Brian Withers and Noel Ferguson, who I hear is back in Mildura. He also mentioned Clem Gier (who worked at Motor Spares) and mentioned boss of the High Ball team, Eric Kerwin. Graeme says that according to his better half, Joan, VK3NLO stands for "Nice Lady Operator". Graeme told me that in 1962 he was sent to Texas (USA) to receive some training in connection with the High Ball job. He spoke also of Alan Matthews, who piloted the tracker plane when the High Ball balloon occasionally wandered off into the sticks.

One of my regular contacts on 80 is Brian VK1NAI, who commutes regularly by charter plane between his QTH at Canberra and his work at the Siding Springs optical telescopes near Coonabarabran, NSW, in the New England Ranges. Brian's job at the work QTH involves the taking of photographs of parts of the Milky Way through the telescope that he is assigned to. He has his FT7 with him at the telescope site, and when the early morning sky is overcast, he can be heard on 80 chattering to someone like me or Gordon VK5HM (Holy Moses if it's a Sunday). Apparently the picture taking telescope has to be readjusted for a new "scan" every fifteen minutes, and in between "scans" Brian also comes up on air. But time and fate wait for no man and neither does the celestial sphere with respect to the movement of mother earth, so Brian has to do a bit of re-focussing or something to do yet another "scan" of the Great White Way.

There's some real veterans among those heard on 80 these days. The Novice call has enabled many oldtimers to take to the air, and I hear that a World War 1 fighter pilot has just got "his wings" on 80 as a Novice. Unfortunately, I know neither the name nor the call sign, but I'll be pleased to say hello to him if ever I hear him.

If you were swimming in waters located 40 degrees south, 100 degrees east, a very long way from the most southerly part of Western Australia, in the Southern Ocean, you might see a tuna boat, and on that boat is a Japanese named Toshi who's been very active on 80 from down that way. Earlier, Toshi's tuna boat had called at Fremantle, where he was welcomed by two friendly VK6s who showed him around. Toshi will be in the Southern Ocean latitudes for the next two months, after which his tuna boat will call at Hobart before heading for Japan. Have heard Toshi, and look forward to making direct contact with him before he leaves the spot where they are fishing.

EDITOR'S NOTE

Joe VK2NIM writes a regular column in "Flux", the journal of the Mildura Amateur Radio Club. We will publish portions of his notes from time to time. Some feedback from readers would be appreciated.

If you have an item to contribute in the sense described above, why not drop Joe a line — QTHR. ■

Reference Data for the FT101B

Roy Hartkopf VK3AOH

After spending quite a lot of time and trouble digging out information about modifications for the FT101B I feel that the information might also be useful to others who want to repair or modify this popular transceiver. As far as possible I have listed the original source and author. Many of these hints have been reprinted several times, sometimes with mistakes and omissions.

1. REFERENCES FROM AMATEUR RADIO

Review. Ron VK3OM, February 1974 — Useful Mods. Geoff VK3AMK, March 1975 — Alignment Problems. Tom VK2BHT, May 1975 — Bias Setting, Noise Blanker. Bruce VK3BM, September 1975 — RF Speech Clipper. Harry G3LLL — VOX Instability, "Hot Mike", Fan Mod., AM Filter. Roy VK3AOH, December 1975 — Further Mods. Geoff VK3AMK — Overload Elimination. Arn VK5XV, January 1976 — Crystal Selection. Ray VK2AVR, August 1976 — RTTY Reception. Peter VK3ZZU, November 1977 — Digital Readout. Keith VK2BGZ, October 1978 — Digital Readout Mods. Noel VK3ABH, October 1978 — Preamp. VK5KL, September 1979 —Preamp (SL 1611C). VK3SM, December 1979.

2. REFERENCE FROM BREAK-IN

Mods. to Cure Strong Signal Overload, C. Donoghue ZL2BAF, March 1978. (Reprinted several times in other places.)

3. REFERENCES FROM FOX TANGO CLUB MAGAZINE

(There is much more information available from the Foxt Tango Club on maintenance, repairs and mods. Also service and alignment charts, extender boards, accessories and parts. Contact Milt Lowens WA2AOQ, 248 Lake Dora Drive, West Palm Beach, Florida 33411, USA.)

IC Diagram Information, Vernier for Dial, Protective Pass Filter for PO Adjust, Walter WB4ITH. October 1973 — Band Pass Filter Alignment, Harry G3LLL. September 1975 — Fan Control, Don VK5PX. February 1976 — Fast and Disabled AGC, Tom K0RPH. April 1976 — Electronic TR Switch, Alfiie G3XEY. August 1976 — Elimination of Speaker Clicks, Jim W6EHG. Side Effect of Fan Mod., Roy VK3AOH. September-December 1976 — Noise Blanker Layout. February 1977 — The Blank Band Switch Position. March 1977 — VFO Unit Details, Hum Problems on Receiver, Doug WB1ADB. August 1977 — Pilot Lamp Removal. December 1977 — Audio Derived AGC, Bob N4BP. December 1978.

For anyone interested in working on the FT series the Fox Tango Club can provide a vast source of practical information. Good luck. ■

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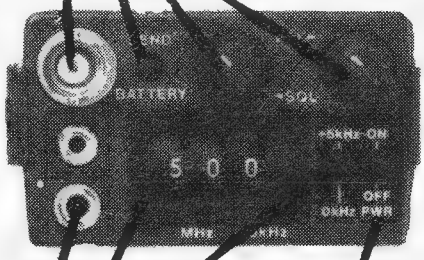

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Modes of operation:
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Power requirements:
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Current consumption:
DC 1.5 amps receive, DC 20 amps transmit.

Case size:
93(H) x 240(W) x 295(D) mm incl. heat sink.

Weight: Approx. 6.5 kg.

TRANSMITTER

Power input:
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Spurious emissions:
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Frequency response:
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Third order distortion products:
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RECEIVER

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Selectivity:
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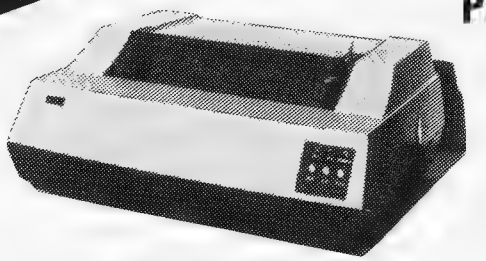

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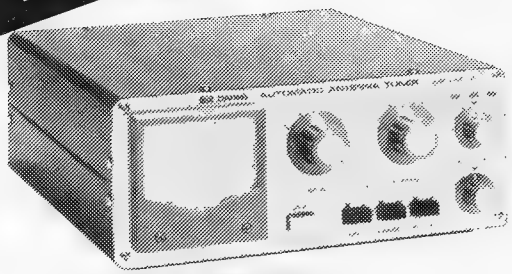

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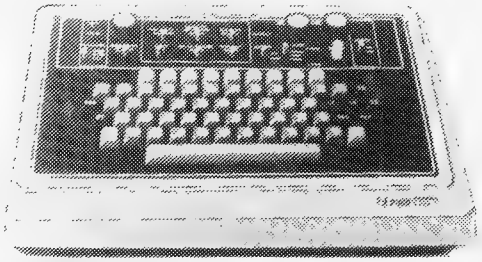

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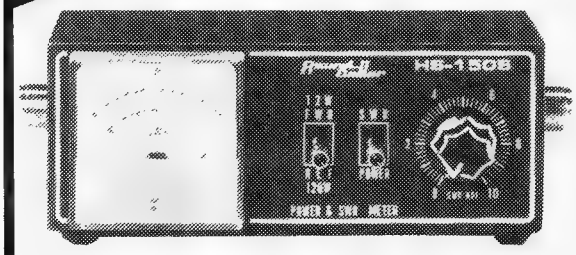

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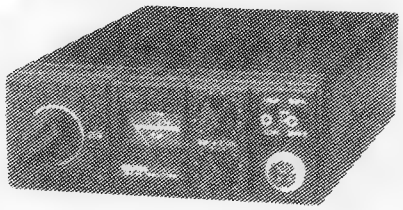

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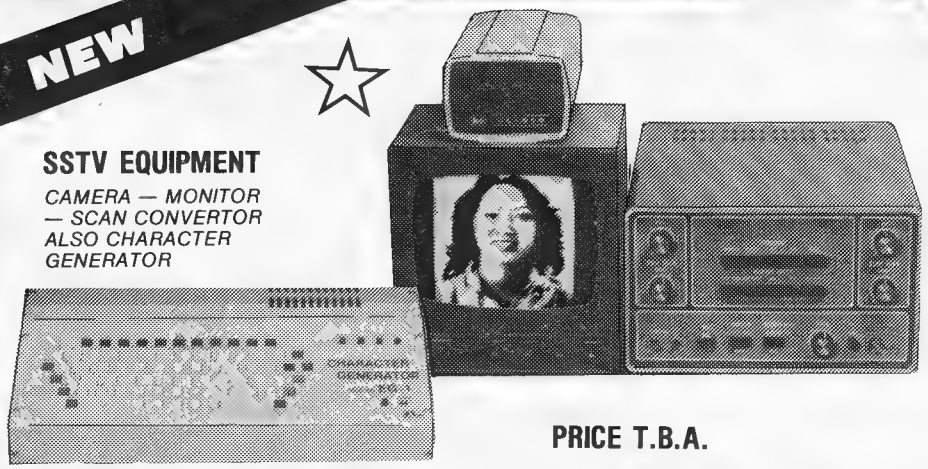

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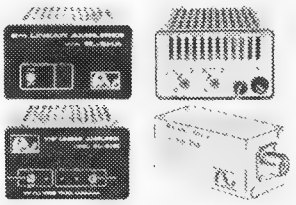

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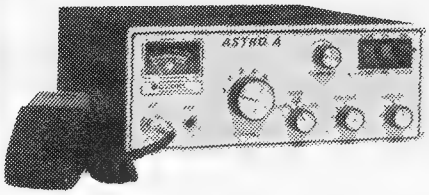

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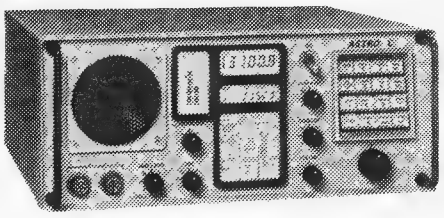

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AMATEUR SATELLITES

R. C. Arnold VK3ZBB

PHASE III OSCAR

Launch date is now set for 20th May, 1980. The satellite has been delivered by AMSAT to the French authorities at Toulouse for final integration.

Peter VK7PF has been working on orbit predictions for the Phase III Oscar which will be known as AMSAT OSCAR 9 after launch. Peter has very generously given me permission to publish two of his sets of calculations which, all being well, should provide a basis for tracking A09 on its varying orbits.

The first set of figures refers to the transfer orbit which will be applicable to the early orbits — listen only, NO OPERATION. The second set of figures applies to the final orbit situation which we hope will be a continuing situation — NO OPERATION UNTIL ADVISED.

Some explanation of the figures is necessary:

1. The time is that applicable at the first equator crossing, i.e. similar to AO7, etc.
2. The longitude at 0 is a reference only and the actual longitude at the start must be added on.
3. HT is height in km from earth.
4. DIST. is maximum distance from satellite.
5. RADIUS in degrees is the coverage of the satellite. To convert to kilometres multiply by 111.98.

Peter now has his computer set up to accept any alteration to the basic provisional data which may be affected at the time of launch.

SATELLITE OPERATORS

— Welcome to Paul VK3BWC, who is active on all Modes of AO7 and 8.

— Jim ex P29ZFB is now VK4ZJK in Cairns. At present on Modes A and B, Jim is working on his rigs and will soon be on Mode J.

— Eddie VK4ZEZ is now located in Brisbane and will shortly resume operation.

— Rod VK4ZRQ is working JA on Mode B.

— Proportionately to licensed amateurs, VK8 is probably the most active call area with Maurie VK8OB and Albert VK8HW regular operators.

— After a long break, Barry ZL3AR is back on AO7B. Ray ZL1BDU is a stalwart on all Modes with ZL1TXX, ZL3BWC and ZL1BNC as regular operators.

— Stewart ZK1AA will shortly resume operations on Mode A.

— Peter H44PT is regularly heard on both AO7 and AO8 and is welcome DX for operators in VK7 and VK3.

— Peter VK4PJ is active each morning and is looking for contacts on Modes B and J in particular. Sorry we are unable to help Peter unless we can set up a rig at the work QTH!

— Peter also sends a reminder to users of the QM70 transverter that it is not fitted with polarity protection — sounds as though some wires were crossed in Peter's rig!

BIBLIOGRAPHY

The January 1980 edition of "Radio Communication" (RSGB) contains two interesting articles —

(a) Oscar 7 between sunlight and the earth's shadow.

(b) A review of a new piece of equipment "The Oscarbox".

Both good reading for Oscar enthusiasts.

PREDICTIONS

As I have mentioned in previous editions of these notes it is a pretty hairy business to give accurate predictions some ten weeks ahead and consequently some criticism has been forthcoming on the inaccuracies which have crept in. Also, the publication dates of AR have been late in recent months, making some of the figures "old hat". However, the regular operators have obviously overcome these deficiencies by devious means as they appear on time as the birds pass over. Consequently, I am leaving predictions out for the time being but I will give a couple of reference orbits (with tongue in cheek) to assist calculations for the rest of the month.

AMSAT OSCAR 7

April 6th, 1980, Orbit 24659 EQX 0135Z at 93°W.

AMSAT OSCAR 8

April 6th, 1980, Orbit 10635 EQX 0139Z at 75°W.

All interested in amateur satellites can keep updated in several ways:—

1. Join AMSAT and receive "ORBIT" magazine.
2. Qualify for the Mode J Award and receive the Mode J magazine.
3. Listen to the regular Sunday news broadcasts from VK2WI, VK4WIA and VK5WI.
4. Participate in, or listen to, the AMSAT nets on Sunday evenings —
   VK net 7065 kHz, 1000 hr. Z (VK3ACR),
   Pacific Net 14275 kHz, 1100 hr. Z (JA1ANG).
5. Monitor W1AW daily 2300 hr. Z (RTTY).

ACKNOWLEDGEMENTS

To VK3ACR, VK4PJ, VK7PF, ZL3AR. ■

SATELLITE SUB. POSITION
Derived from AMSAT Bulletin, Dec. 1976 by VK7PF

Time and position from equator for AO9 Transfer Orbit
Period: 603.78 minutes.
Inclination: 17.5 degrees
Argument of Perigee: 190.587 degrees
Perigee: 200 km.
Apogee: 34411.28021 km.
True anomaly steps: 10 degres.

Time M	Long W	Lat	Ht (km)	Dist (km)	Rad Deg
0.0	0.0	0.0 N	32,680.7	38,528.5	80.6
69.8	7.9	3.0 N	34,405.7	40,275.9	81.0
140.2	15.9	5.9 N	33,030.2	38,882.7	80.7
201.5	21.5	8.6 N	29,153.7	34,948.7	79.7
248.9	23.6	11.1 N	24,165.0	29,864.0	78.0
283.0	22.1	13.3 N	19,246.1	24,812.2	75.6
306.8	17.9	15.1 N	14,986.0	20,384.6	72.6
323.4	11.7	16.4 N	11,527.2	16,725.9	69.1
335.2	4.3	17.2 N	8,801.9	13,770.5	65.2
343.8	356.9	17.5 N	6,679.7	11,389.9	60.8
350.2	347.1	17.2 N	5,031.7	9,456.9	56.0
355.2	337.9	16.4 N	3,751.3	7,865.8	51.0
359.2	328.6	15.1 N	2,755.7	6,535.1	45.7
362.5	319.3	13.3 N	1,983.2	5,404.0	40.3
365.3	310.0	11.1 N	1,388.2	4,428.9	34.8
367.8	300.8	8.6 N	937.5	3,581.1	29.3
370.0	291.6	5.9 N	607.3	2,847.2	24.1
372.0	282.5	3.0 N	380.9	2,235.6	19.3
373.9	273.5	.0 S	247.3	1,792.1	15.7
375.8	264.4	3.0 S	200.1	1,609.4	14.2
377.7	255.3	5.9 S	237.3	1,755.1	15.4
379.6	246.1	8.6 S	360.5	2,173.4	18.8
381.6	236.7	11.1 S	575.6	2,768.6	23.5
383.8	227.3	13.3 S	892.9	3,489.1	28.7
386.2	217.7	15.1 S	1,328.3	4,323.2	34.2
389.0	208.1	16.4 S	1,904.9	5,282.1	39.7
392.2	198.5	17.2 S	2,654.5	6,393.0	45.1
396.1	189.0	17.5 S	3,621.0	7,697.5	50.4
401.0	179.8	17.2 S	4,864.2	9,254.2	55.5
407.2	170.9	16.4 S	6,463.9	11,142.1	60.2
415.5	162.7	15.1 S	8,524.1	13,463.8	64.7
426.8	155.4	13.3 S	11,171.5	16,344.7	68.7
442.7	149.4	11.1 S	14,538.6	19,915.3	72.3
465.5	145.2	8.6 S	18,706.0	24,254.2	75.3
498.3	143.7	5.9 S	23,567.2	29,252.4	77.7
544.0	145.5	3.0 S	28,598.0	34,383.7	79.5
603.8	150.9	.0 S	32,680.7	38,528.5	80.6

SATELLITE SUB. POSITION
Derived from AMSAT Bulletin, Dec. 1976 by VK7PF

Time and position from equator for AO9.
Period: 656.2 minutes.
Inclination: 57 degrees.
Argument of Perigee: 210 degrees.
Perigee: 1500 km.
Apogee: 35813.87632 km.
True anomaly steps: 10 degrees.

Time M	Long W	Lat	Ht (km)	Dist (km)	Rad Deg
0.0	0.0	0.0 N	26,279.0	32,022.4	78.7
49.1	6.8	8.4 N	30,912.7	36,735.3	80.2
110.5	16.4	16.7 N	34,461.7	40,332.6	81.0
179.9	27.5	24.8 N	35,813.9	41,701.0	81.3
249.7	37.9	32.6 N	34,461.7	40,332.6	81.0
311.2	44.8	40.0 N	30,912.7	36,735.3	80.2
360.2	46.7	46.6 N	26,279.0	32,022.4	78.7
393.9	43.0	52.0 N	21,566.6	27,201.5	76.8
423.5	33.8	55.7 N	17,346.5	22,845.8	74.4
442.7	20.7	57.0 N	13,814.3	19,153.5	71.6
456.7	6.2	55.7 N	10,958.8	16,116.2	68.4
467.2	353.0	52.0 N	8,688.2	13,645.2	65.0
475.2	342.1	46.6 N	6,895.7	11,636.8	61.3
481.5	333.4	40.0 N	5,484.4	9,998.1	57.5
486.5	326.2	32.6 N	4,375.9	8,654.9	53.6
490.8	320.2	24.8 N	3,509.2	7,551.7	49.8
494.4	314.8	16.7 N	2,837.9	6,649.3	46.2
497.6	309.9	8.4 N	2,327.7	5,922.6	42.9
500.5	305.1	.0 S	1,953.6	5,358.1	40.1
503.2	300.3	8.4 S	1,697.9	4,951.5	37.9
505.7	295.2	16.7 S	1,548.9	4,704.9	36.4
508.2	289.6	24.8 S	1,500.0	4,622.0	36.0
510.7	283.1	32.6 S	1,548.9	4,704.9	36.4
513.2	275.3	40.0 S	1,697.9	4,951.5	37.9
515.9	265.7	46.6 S	1,953.6	5,358.1	40.1
518.8	253.5	52.0 S	2,327.7	5,922.6	42.9
522.0	238.4	55.7 S	2,837.9	6,649.3	46.2
525.6	221.4	57.0 S	3,509.2	7,551.7	49.8
529 9	204.5	55.7 S	4,375.9	8,654.9	53.6
535.0	190.0	52.0 S	5,484.4	9,998.1	57.5
541.3	178.6	46.6 S	6,985.7	11,636.8	61.3
549.2	170.3	40.0 S	8,688.3	13,645.2	65.0
559.7	164.5	32.6 S	10,958.8	16,116.2	68.4
573.7	160.9	24.8 S	13,814.3	19,153.5	71.6
592.9	159.4	16.7 S	17,346.5	22,845.8	74.4
619.5	160.4	8.4 S	21,566.6	27,201.5	76.8
656.2	164.0	.0 S	26,279.0	32,022.4	78.7

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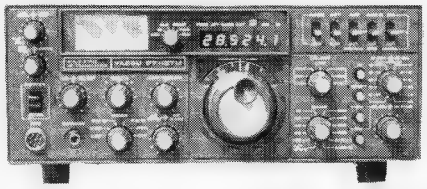

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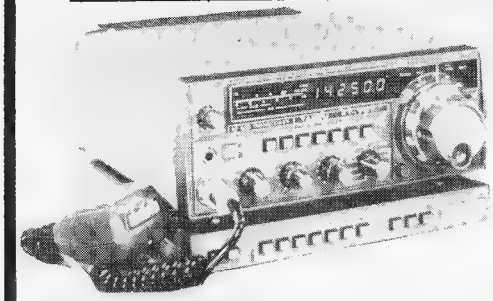

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optional Fan.
optional DC-DC converter.
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YD-148 Desk mike.
FT-901DM. 160-10M Transceiver.
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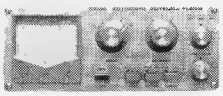

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VHF/UHF BEACONS

Freq.	Call Sign Location
50.005	H44HIR — Honiara
50.023	HH2PR — Haiti
50.025	6Y5RC — Jamaica
50.035	ZB2VHF — Gibraltar
50.036	HC1JX — Quito
50.038	FY7THF — French Guiana
50.040	WA6MHZ — San Diego
50.040	ZS6VHF — Edenvale
50.048	VE6ARC — Alberta
50.050	ZS3E — South West Africa
50.055	ZL1UHF — Aukcland *
50.060	PY2XB — Sao Paulo
50.070	YV5ZZ — Caracas *
50.070	VP9WB — Bermuda *
50 080	W1AW — Connecticut
50.080	TI2NA — Costa Rica
50 085	WA6JRA — Los Angeles
50 088	VE1SIX — New Brunswick
50 089	WD4CEI — North Carolina *
50.100	KH6EQI — Pearl Harbour
50.104	K4EJQ — Tennessee *
50 105	KC4AAD — McMurdo, Antarctica *
50.110	KH0AB — Saipan *
	JD1YAA — Minami, Torishima Is. †
50 110	AL7C — Anchorage *
50.120	4S7EA — Sri Lanka *
50.144	KC6IN — Ponape, Caroline Is. *
50.498	5B4CY — Cyprus
51.999	YJ8PV — New Hebrides
52.200	VK8VF — Darwin
52.250	ZL2VHM — Palmerston North
52.300	VK6RTV — Perth
52.350	VK6RTU — Kalgoorlie
52 400	VK7RNT — Launceston
52.440	VK4RTL — Townsville
52 450	VK2WI — Sydney
52.500	JA2IGY — Mie †
52.500	ZL2VHM — Palmerston North
52.510	ZL2MHF — Mt. Climie
52.800	VK6RTW — Albany
52 900	VK6RTT — Carnarvon
53.000	VK5VF — Mt. Lofty
144.010	VK2WI — Sydney
144 162	VK3RGI — Gippsland
144.400	VK4RTT — Mt. Mowbullan
144.475	VK1RTA — Canberra
144 500	VK6RTW — Albany
144.600	VK6RTT — Carnarvon
144 700	VK3RTG — Vermont
144 800	VK5VF — Mt. Lofty
144.900	VK2RTX — Ulverstone
145.000	VK6RTV — Perth
147.400	VK2RCW — Sydney
432.400	VK4RBB — Brisbane

* Denotes a new listing and comes from a recent list sent ot me by SMIRK, and as the USA has been in the thick of 6 metre activity it seems these new listings are more permanent than some.

* Denotes a change of location or call sign.

Although not in the general list, remember by the time you read this the beacon from Geelong on 52.330 may be operating; the March advice I received was that there were still some problems being ironed out in regard to the licensing.

SIX METRES OVERSEAS

Bill W3XO and "World above 50 MHz" report a collapse of 6 metre DX in the Northern Hemisphere, occurring about mid-January and continuing through until March, despite solar flux readings around 220 and single figure A index. The poor conditions were very disappointing for EI6AS, who received permission to operate on 6 metres on 5-1-80 and at time of writing had worked no DX! The north-south path to South America has not totally collapsed, on 15-1 WB3HZC who operated as 8P6II for about 10 days in mid-January worked LU6DCA, LU3EX, LU6DII, PY1RO, PY1DMQ, PY2XB, CP8AZ, HC1BI and HC1FM, all using FT62OB and 3 element beam, which at the end was left with 8P6BN so that he and 8P6FV can supply Barbados QSOs.

On 5-2 at 0620Z JA3EGE worked 4S7EA in Sri Lanka, while PY2XB reports three contacts with JR6RRD, Okinawa, around 0200Z on 31-1, 4-2 and 11-2. Sao Paulo and Okinawa are about on opposite sides of the earth from each other, so that's about as far as you can go PY2XB adso reports PPOMAG, Trinidad Island, has been working into South America and Caribbean about 2300Z running 1 watt! HP1XRK is the new Panamanian call of KZ5JM, and HP1XDS is also active on 6 metres. CP8AZ is operating from Bolivia, South America.

EI2W in Ireland began operating on 20-10-79 using an FT620B and 3 element yagi, and up to the end of December had made 1552 QSOs with 600 stations across the Atlantic. All USA call areas plus VE1 to 4 and 0 have been worked as well as XE1FE, KP4 and KP2. Best day 18-11 with 106 stations contacted, 20-11 70 stations, and 11-12 saw 83 stations added to the log. On 15-12 the MUF rose to 62.250 MHz and 72 six metre stations were worked, including KO8FH using 3 watts and 5 x 7.

THE LOCAL SIX METRE SCENE

John VK5ZBU writes that since his last correspondence terminated on 14-12-79 conditions have been a mixture of good and poor, depending where you live! To report without qualification is unwise, hence John says "at this QTH".

18-12 VK1, VK2, VK3, VK4 and VK7; 22-12 VK4; 23-12 VK2, VK4 and VK8; 24-12 VK4; 26-12 VK4; 28-12 VK2; 30-12 VK2, VK3, VK4, VK6. Thus ended 1979 and 20 days when the band was open. HL9TG appeared on 31-12.

1980 opened quietly. 2-1 VK2 and VK7 5 x 9. 11-1 a big opening to VK7 for over four hours with nine different VK7s being on. Anthony VK7ZTA reported he was hearing signals from VK5 at levels never heard before. Between 12-1 and 16-1 VK2, VK3, VK4 and VK7 all 5 x 9; 17-1 VK3, VK7; 18-1 VK4; 19-1 VK4. Between 20-1 and 31-1 worked VK4ZVZ, VK4ZJB, VK4ZGI, VK4QO, VK4ZYA, VK6XY, VK2ZZV, VK2ZZY, VK2YOT, VK2ZRU, VK2ASZ, VK2ZBQ, VK2ZYI, VK7DA, VK1RK, VK8ZRT, VK3YII, VK3DKC plus ZL2AQR at 5 x 9 plus 20 dB! Very few signals were below S9 during January, and the band was open for 22 days.

January was thus a month of outstanding contacts for Es at a time when unexpected, with the special conditions to VK7 on 11-1 and VK3 on 17-1, plus ZL2AQR, being the highlights. During the VK7 opening ZL4LV and ZL4OY were heard but not worked.

February did not prove very fruitful, only 12 days when signals were recorded in Adelaide, but these included contacts with JA2HMO, JA4KJO and a few VK2 stations. During this time many weak signals from Japan were noted late in the evenings on 50 MHz, at one stage 5 out of 6 days JAs were audible weakly.

March has proved to be the doldrum period; on 15-3 VK1VP and VK2YOT providing good contacts, with a brief appearance of VK4ALM. On 21-3 at 0130Z JAs appeared on 50 MHz, in fact most of the lower part was active with heterodynes. Quickly some JA8s were heard with JA8RC at S9+ and JA8RVR and JA8HWL were heard working various VKs. At one point stations were to be found every 5 to 10 kHz on the band. The band, however, was not stable and signals to VK5 dropped right out as if switched off (only to re-appear later but weaker. KG6DX was quite strong on 50 MHz with Col VK5RO working from 28 MHz as 52 MHz was not productive of signals from Guam. Joe seems to be really keen since working the PY1 over a distance of about 12,000 miles.

With most interesting reports coming in from north, east and west, John remarks that VK5 looks like being the last to receive the benign smile from whatever gods rule the radio spectrum, but April is close at hand and we may soon discover what is in store DXwise. It would be a very brave man who tries to put a tag or label on what form of conditions have existed during the present cycle, no doubt in due course text books will be re-written and much of the now ancient theory discarded.

Little has been heard of VK9XT in southern Australia, so Christmas Island may still be a "wanted" country down south, on 6 metres. The weekend of 22-3 and 23-3 showed some promise at times but did not develop as hoped, an opening to JA was not generally in good shape here. Commencing about 0240Z signals were variable but enough to encourage interest amongst the VK5s at any rate. Col VK3YII seems to be really enjoying his travels State-wide, frequently appearing on stations visited.

NEWS FROM ALICE SPRINGS

It is not often a letter appears on my desk from Alice Springs, but Rodger VK8ZRT has written to indicate what went on up there during the last "season". JAs were worked on 27-9, 29-9, 30-9, 2-10, 3-10, 4-10, 5-10, 8-10, 10-10, 11-10, 16-10, 18-10, 24-10, then on 26-10 five VK5s and three VK3s; 27-10 JA1, 2, 3, 4, 5, 6, 7, 0 at 5 x 9; 16-11 VK2BMX; 26-11 VK6ZEL, VK6ZKO, JK1BER, all 9 plus. 27-11 VK4QO; 28-11 VK2VC.

4-12 VK2ZRU 2300Z and again 0020Z 5 x 9, VK2AVW and VK2HZ. 30-12 VK1RK, lots of VK2s, VK3ATN 5 x 9 plus 30 dB, plus VK3BHS, VK3OT and VK3NM, then VK5ZZZ. 26-1 VK5, VK3. 3-2 VK3II and VK3CI. 12-2 to 28-2 JAs 1 through 9 with JK1BER best signal at 5 x 9 plus 20 on 17-2 at 1215Z. Later JJ1TLK dropped out on 20-2 when his rig died at 0440Z, so he borrowed another rig to finish QSO!

Thanks Rodger, and I note you are using an IC502 and home brew 25 watt amplifier and 4 element yagi up 7 metres, and in the process of building a transverter for use with your TS520S.

TWO METRE METEOR SCATTER

Mike VK7MC has written outlining some proposals for 2 metre operation. He currently has 400 watts PEP from a QB3-300, one 16 element yagi finished and another under construction.

The VK3RGI beacon on 144.165 presumably in the Gippsland area was copied in Hobart on 19-2, with not other VK3 signals or repeaters to be heard! The VK7RTX beacon is evident most of the time, peaking S8 on 19-2 and the path is difficult. VK7DA has also been worked, all of which indicates a good capability for 2 metre DX. 2 metres from Hobart is mostly difficult.

Mike would like to hear from interested operators on 2 metres, giving details of their equipment plus phone number and when they can be contacted. He would like to arrange regular skeds leading towards 2 metre meteor scatter work, and suggests 80 and 40 metres as suitable. Operators in VK2, VK3 and VK5 are therefore invited to try their luck and contact Mike. His address is QTHR or Mike Hennessy, PO Box 52, Sorell, Tasmania 7172.

Quite a bit has been written on the art of meteor contacts during the past 10 years in AR, so it may pay to look up the articles to assist in any such work which may be undertaken. Go to it.

SIX METRES FROM TASMANIA

Greg VK7ZYT writes with latest DX worked on 6 metres from Collinsvale near Hobart, when the band opened on 2-3-80 with Ch. 0, Wagga, at 0955Z at S2. At 1006Z VK5AS 5 x 1 heard working VK1VP, who was not audible. At 1018Z Greg worked JJ1NLR, followed by JR1MFD, JE1CZV, JA4MBM and JI4WEU, and hearing JA4HTW, JA2HMO, JE6DQN and JK1VBX. Signal strengths varied from S1 to S5. Ian VK7ZIF worked JA4HTW only, paying the penalty of coming late on the band after listening to JAs on 10 and 15 metres! Band closed 1132Z.

At the same time above Joe VK7JG worked KH6NS 5 x 6 both ways. The JAs were not heard in the north of VK7, but were worked by a few in VK3 and VK4. Looks like Class II TEP was involved in view of flutter on signals.

Greg uses a home brew solid state transverter running 15 watts PEP to a 3 element beam at 22 feet, his QTH is about 1,000 feet a.s.l. Thanks for writing, Greg.

NOTES FROM ROCKHAMPTON

It's good to at last have some news from VK4, and Hal VK4DO writes to say the first JAs this year came into Rockhampton on 31-1, then nil until 9-2, and from then on about every day. At his time of writing (20-3) he had worked 503 JAs on 52 MHz and could have worked many more.

On 5-3 Hal got his first two KH6 at S6 and S3, and then KG6DX on 17-3, first time for 1980, but their tenth contact. No USA contacts so far in 1980, but hoping for a break-through. (Aren't we all!)

Hal reports the 1980 six metre pattern is following closely that of 1948 and 1949 as far as JA is concerned, the number of contacts in each year from February to March 20th being 509, 345 and 503 respectively, with the total contacts being 1,357 in 1948, 1,661 in 1979. All 47 Japanese Prefectures worked on 52 MHz SSB and CW by 14-10-79, and only want Yamanashi QSL for the award. Total is now 12 countries on six metres. Thanks Hal.

NEWS FROM YORK PENINSULA

For those of you who don't know York Peninsula, it is west of Adelaide by about 60 miles and at a place between the towns of Maitland and Arthurton on the Peninsula you will find that doyen of VHF, David VK5KK, having moved from his former abode at Wasleys into an apparently even better VHF site! He can now run 400 watts PEP on 6 metres to an 8 element yagi, some power on 2 metres to a 10 element at 20 feet (shortly to be replaced by a 15 element long-boomer) and a 16 element vertically polarised for FM.

David reports the area is even better than the Adelaide plains for operation into or hearing Ch. 7, Mt. William. Good series of tropo openings on 21, 22, 23 March to VK1, VK2 and VK3, best day being 22-3, with following worked: Ch. 2 VK5RMW, Pt. Pirie; Ch. , VK2RWG3 Wagga; Ch. 3, Ballarat; Ch. 4, Bendigo; Ch. 5, VK3RMM, Mt. Macedon; Ch. 5, VK5RHO; Ch. 5, Griffith; Ch. 7 VK3RWZ, Mt. William; Ch. 7 in VK1, Mt. Ginini; Ch. 8 VK5RAD; Ch. 8 VK3RWE, Wodonga; and another unidentified Ch. 8. All from 2200 to 0100Z. Not a bad effort, David.

On 16-3 David worked Ch. 7, Mt. Ginini, at S2 compared with Ch. 7 VK3RWZ almost inaudible. The three most consistent repeaters interstate are Cr. 5 VK3RMM, Mt. Macedon; Ch. 7 VK3RWZ, Mt. William; and Ch. 8 VK3RNE, Wodonga! On 22-3 worked VK3HS/P at Eildon through three repeaters mentioned above in 30 minutes. (Big deal, how about trying it on SSB!! . . . 5LP.) After that snide remark it is good to see David doing the best he can as he assembles the various bits of gear, and it looks as though he will continue to keep VK5 before the notice of others with his activities; the ball and chain around his foot will not help at times though!

HF LIAISON FREQUENCY

George VK4ZGI/NQT writes asking for consideration to be given to an HF liaison frequency for use in Australia similar to the 6 metre liaison frequency of 28.885 MHz which is being used internationally, resulting in some very good DX contacts taking place.

George points out that quite a portion of VHF operators in Australia are Z calls and possibly novice licence holders, and a frequency outside the bands on which they can operate isn't much help. He suggests its main value would probably be for 2 metre and higher bands contacts, 99.9 per cent of which would be confined to Australia anyway.

The question of such a liaison frequency has been discussed in VK5 on several occasions but the suitability of such a frequency is not easy to fulfil when one considers our times differences, particularly in the summertime. 80 metres would be a good choice in some ways as it is always available on a night time basis throughout the year, but noisy in summer and rather cluttered with signals — if you go to the end nearer to 3.7 MHz where signals are not so plentiful you leave out the novices. For day time usage a frequency on 40 metres would be preferable and this would not be hard to find. At the moment 28 MHz is reasonable and provides a band relatively free of QRM and QRN, and the ability to cater for novices/Z calls, but skip conditions may not always allow contacts, particularly over shorter distances.

So what do we do. The idea is OK. Have you any thoughts and, if so, are you prepared to write to me outlining them? For starters, may I hear what you think about 3600 kHz for night time, 7100 kHz day time, and 28.385 MHz while conditions last. This latter frequency you will note is 500 kHz below the 28.885 kHz now being used, hence it would only need the flick of a switch on the average transceiver to go from one to the other for listening purposes anyway, and places the lower frequency one in the novice band. The 7100 kHz won't suit novices but there is little else to offer at present if you want a local day time band.

If you study all the pros and cons of the matter you will soon realise just how difficult it is to satisfy everyone — the 28.885 MHz international net is working well because conditions are such at the moment that contacts are possible at almost any time to most places, but this will not always be so, but when conditions do fade there then the 6 metre DX will too! It is unfortunate that QRM on any frequency in the 80 metre band will probably preclude anyone monitoring a particular frequency as you can with 28885, so perhaps we should look at 28385 as a possibility. What are your thoughts?

HONG KONG AGAIN

A letter from Anthony VS6EZ advises that between 1301 and 1352Z on 5-3 on 52.100 SSB and running 3 watts output to a 5 element beam (which is tuned to 50 MHz) he had contacts with VK8GB 5 x 9 and received 5 x 6; VK8VV 5 x 9 plus 20, and 5 x 9; VK8ZBW 5 x 8 and 5 x 9. Others who worked from Hong Kong were VS6FX Icom 551 and 100 watt linear to a groundplane, VS6AB IC551 to 2 element beam, and VS6EG using Trio equipment and a HF multi-band vertical antenna! After all this activity slowed down, Anthony worked VK4ZBJ at 5 x 2.

On 7-3 VS6EZ and VS6FX both worked VK8VV for a second time at 1301Z, 5 x 9 and 5 x4. Anthony uses the RM3 unit in conjunction with the IC211 and the 2 and 6 metre transverter to scan between 52.040 and 52.180, but emphasises his only out-of-band allocation is 52.100 $\pm$ 10 kHz, so that's where you will have to be to work any VS6 station on SSB, and for CW use 52.025 only. Apparently all this operating has stirred up the Hong Kong gang to some extent, but the stirring would be much more useful if better antennae were in use at their end — perhaps something will be done now to produce some reasonable beams.

TWO METRES AND UP

16-3 provided some good tropo conditions on 2 metres, with VK5CK VK5RO, VK5ZPS and VK5LP and possibly others working VK2DGW, VK2DAB and VK2ADZ on SSB from about 2150Z onwards, signals depending on where you lived varied from 5 x 2 to 5 x 5; these stations are located in Griffiths, NSW, and provide good long haul contacts. VK3ATN and other VK3 stations were there, too. At 2246Z VK5LP worked VK3ATN on 432.1 MHz at 5 x 5 both ways, while VK3AXV and VK3AOS were both worked on 6 and 2 metres as well. Garry VK5AS at Cowell on the West Coast also was in the act, and had 5 x 9 signals on both bands at this QTH. Rob VK3BHS also came on and it seemed like old times to have so many stations from interstate on 2 metres again. Of course David VK5CK from his box seat on the top of the mountains had to virtually knock back contacts to give his jaw a rest!

During the opening Ray VK3ATN mentioned he worked during the Ross Hull Contest to get 168 contacts on 6 metres, 303 on 2 metres and 89 on 432 MHz. At least half the 432 contacts were with interstate stations, best scoring for 48 hours was 1,402 points. A perusal of the copy of his log which he sent me shows what can be done if you want to try and have a location somewhere in the middle of the activity.

Other things learnt the other night when the band was open included information that VK5IK at Eudunda, about 70 miles north of Adelaide, has been doing well on 2 metres, but not much information coming through at this stage. Also Roy VK3AOS is operational on 432 MHz and there will be others in western Victoria coming on 432 in the near future in an effort to get around the likely interference problems of Ch. 5A in that area.

In an effort to try and stimulate further interest in 432 MHz I propose departing from usual practice in this column and have the circuit of a very low noise pre-amplifier published, with advice on a kit of parts costing about $22. I have been too busy on other matters this month to have the time to prepare what is necessary.

On 25-3 comes news the VK5VF beacon was heard in Perth again by VK6HK, so perhaps conditions will be suitable again soon for some extra stations to work into Perth from Adelaide, not an easy thing to do.

On 26-3 a set of reasonable tropo conditions produced good signals across VK5 on 2 metres, with Ch. 7, Mt. William, being very good, also Ch. 2, Port Pirie. On 144.1 SSB three stations from Pt. Pirie area were worked here, VK5ZMJ, VK5ZNP and VK5NW, while VK5ZMJ and VK5LP had a 432 MH contact.

SOLOMON ISLANDS INTO VK5

In response to a hurried phone call from David VK5KK I was quickly on the air on 52.050 at 2222Z on 26-3 (GMT day) and worked H44PT 5 x 9 both ways and H44DX 5 x 8 and 5 x 9. David had earlier worked H44PT with a report received of 5 x 9 plus 30 dB! I am not sure who else worked the H44 stations, but they were the first for me. Apparently it all started from 28885 when Keith VK5SV was talking with Peter H44PT, so the liaison frequency paid off once more.

Soon after the H44 contacts Eddie VK1VP was heard but no contact made. A Y8J maritime mobile station in the Pacific was also heard on 50.109 at 2240Z at S2. Later talking to Andy VK6OX on 28885 he mentioned working VK8XT on backscatter on 15-3 at 1338Z; pleasing to know Steve was able to work into VK6 from Christmas Island. Andy same day worked VS6FX at 1423Z and VS6CT 1424Z both 5 x 1 SSB, and plenty of JAs to be heard at the same time. On 17-3 Andy worked Ross VK4RO at 1200Z on backscatter — so far Andy has never been able to work Ross on Es. Also on 17-3 VK6OX worked KG6DX and KG6JDX at 1147Z 5 x 3/4, being the first time Guam has been heard in the evening. On 18-3 he heard H44PT on 50 MHz and tried to work him split frequency but Peter was too weak.

CLOSURE

Just before closing, if you have an IC502 and want it to tune 50 MHz at the flick of a switch I suggest you write to David VK5AMK (VK5ZMO in the Call Book), who could help you with information. Requires about an hour to modify and needs a couple of diodes, a few capacitors and resistors. This will allow for split frequency working, so perhaps a stamped, addressed envelope to David might be worth your while if you have the need to monitor 50 MHz.

Thought for the month: "A man who says he understands his wife, probably doesn't speak the truth about other things either."

73. The Voice in the Hills. ■

QSP

WARC 79

"While the IARU fielded an experienced, hard-working team, the real heroes are those members of national delegations, amateurs and non-amateurs alike, who spoke up time and again in defence of amateur interests. Of course, they would not have been able to do so had it not been their national policy to support Amateur Radio, and in most cases this reflected a lot of effort over the past several years by the amateur societies of those countries. In general, the atmosphere of the Conference was favourable to the Amateur and Amateur Satellite Services. To most administrations there was no need to justify our existence; opposition generally was based not on an anti-amateur attitude, but on the feeling that other services had a greater need or deserved a higher priority. In parts of the spectrum where we made gains, few other services made greater gains; where we suffered setbacks, many other services also suffered."—QST January 1980. ■

AWARDS COLUMN

Bill Verrall VK5WV
7 Lilac Ave., Flinders Park, S.A. 5025

ALARA AWARD
This award is sponsored by the Australian Ladies' Amateur Radio Association, which now has 85 members.

BASIC AWARD
Class A: Work 10 members in VK, ZL or P29, including at least 3 VK call areas. No more than 3 VK3 stations to be included in the 10 members.

ADVANCED AWARD
Class B: Work 15 members, including 4 VK call areas. No more than 4 VK3 members to be included in the 15 members worked for the award.

SPECIAL ENDORSEMENTS
All Phone, all CW, all Novices, mixed, band endorsements, e.g. all 10 metres.

A sticker is available for each additional 10 members worked.

The award is open to both OMs and YLs.

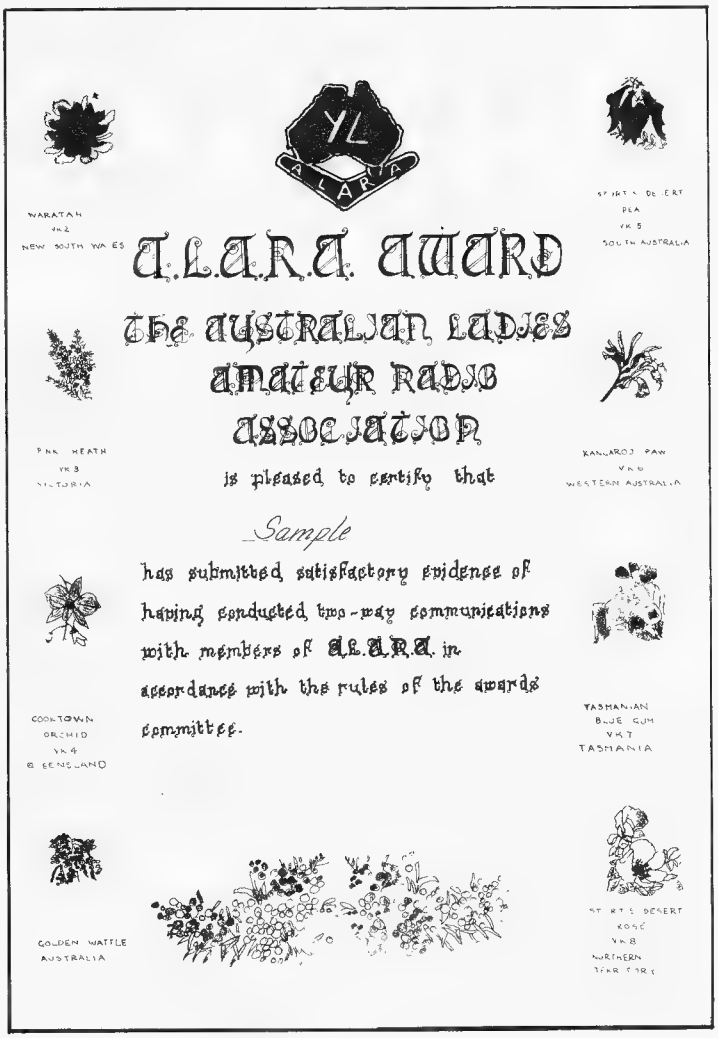
Contacts may date from 30th June, 1975, which is the date marking the birth of ALARA.

Applications for the award may consist of a log extract signed by two amateurs.

ALARA net contacts cannot be counted toward the award; however, contacts made in other nets may be claimed.

COST
$A1.00 or 4 IRCs.

APPLICATIONS
Should be forwarded to the Award Officer, Heather Mitchell VK3AZU, c/- ALARA, Box 110, Blackburn, Victoria 3130.



DESCRIPTION
This award measures 2100 mm x 295 mm printed on high quality matt paper. The nine Australian flower embles are in multi-colours with the logo in yellow and black and printing in black — quite an unusually attractive award.

MARIS AWARD
This award is sponsored by the Maltese Amateur Radio International Society (NSW Branch).

REQUIREMENT
Australian stations are required to work 6 (six) Maltese amateur radio stations.

Contacts may be on any band and any mode.

The six Maltese amateur radio stations contacted must be as follows:

(a) 2 VKs — one must be a committee member of MARIS (NSW Branch); one must be a member of MARIS.

(b) 1 9H1-4 — must be from Malta/Gozo.

(c) 3 9H1-4 — must be any Maltese amateur radio station in any part of the world.

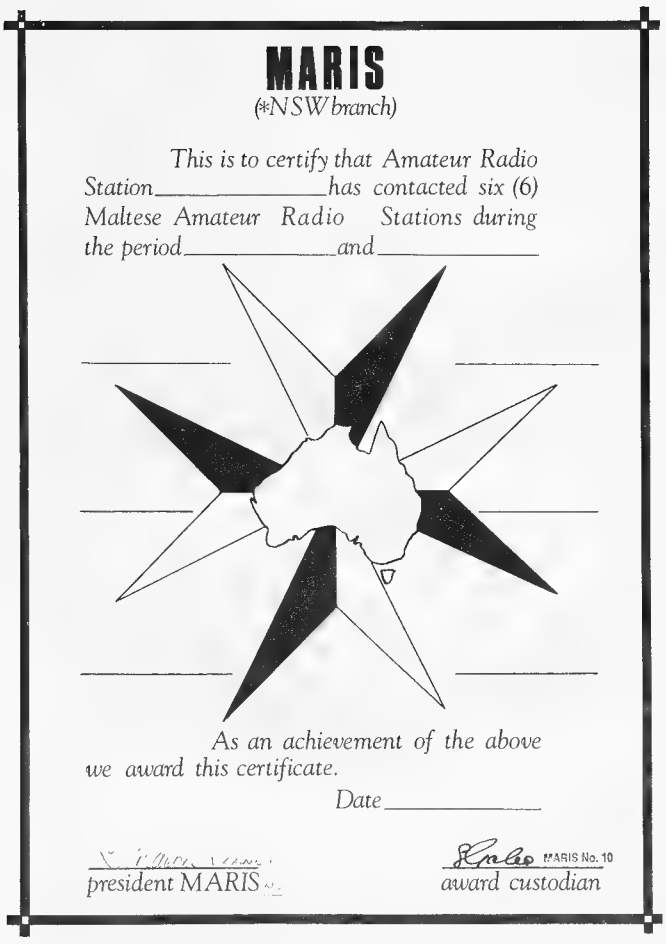
Log details only are required including the name of the station operator worked.

COST
$2.00 or equivalent in Australian stamps or IRCs to cover postage by return airmail.

APPLICATIONS
Should be sent to the MARIS Award Custodian, 57 Fairview Road, Cabramatta, NSW 2166, Australia.

DESCRIPTION
This award measures 210 mm x 300 mm printed on high quality matt card. The logo and border are in red and printing in black.

Good hunting. ■


MARIS
(*NSW branch)
This is to certify that Amateur Radio Station_____has contacted six (6) Maltese Amateur Radio Stations during the period_____and_____
As an achievement of the above we award this certificate.
Date_____
president MARIS
MARIS No. 10
award custodian

LETTERS TO THE EDITOR

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.

"Sonoma",
Wellington Road, Narre Warren East 3804.

The Editor,

Dear Sir,

A steady trickle of enquiries prompts me to set on record in this, the journal of the Wireless Institute, the history as far as I know it of what is probably the first minute book of the Institute. Some excerpts from this document were discussed in Amateur Radio magazine by the then editor, Ken Pincott, in August 1970; he also drew attention to the conflict with the history being prepared by Max Hull, a history necessarily based largely on recollection of early amateurs, the relevant part of which appears in AR for March 1970.

My uncle, Herbert Howberry Blackman, was born in 1884. He evidently had all the warped curiosity well known in the amateur, though the recollections of his interests, activities and equipment which I received from my father I think may date from after World War I rather than before. That he was an amateur prior to 1914 is clear, because he is listed in a publication called "Wireless in Australia", compiled by the Wireless Institute of Victoria in 1915, when the call XOE (all "experimental" stations then were prefixed "X"); the late Arnold Holst (VK3OH) appears as XPH, and the WIV itself as XPJ. He fought in the War, and on return was active as an amateur until about 1930; I am not sure what his call sign was, but I suspect it was VK3PE. His house and shack were in Closter Avenue, Ashburton, which was pretty rural until after World War II; he died there in 1967. He is recorded in the minutes as giving a lecture on telephony 1915 Mar. 9, which also happens to be the last entry in the minute book; he appears not to have been an office-bearer in the period covered by the book, and he left for the War in, I believe, 1916. I think we can ascribe to his wireless activity after the War, the time at which he acquired the minute book, but why he had it and why he was not called upon to return it are matters of conjecture.

Upon his death I asked the executors of his estate if I might look through his shack for items of historical interest, They agreed, and I took with me the late Ken Gillespie VK3GK. It was an awful mess; I think he had just thrown stuff in from the doorway for 20 years. There were a few complete pieces of apparatus, but many, many remnants. Monash University got a moderately complete home-made receiver, of about 1920, and Ken took a bus load of other material, including anything that looked remotely useful to be dispersed among the amateurs he knew involved in restoring old equipment. The floor was about a foot deep in paper; delving had all the elements of an archaeological "dig", and as we worked down we dated the level we had reached. A number of old textbooks on electrical topics came out of this, which are now held by the Hargrave Library at Monash. On the penultimate level we found the call book mentioned above, and at the lowest level of all, right on the floor, the minute book.

The book itself is a quarto-size exercise book, bound in black cloth, of about 100 pages. Apart from a few paste-ins, it is handwritten. When found it was damp, and in a parlous condition; the handling it received while its more obvious treasures were being mined did not help. Its preservation posed two problems. Firstly it required the attention of an archive specialist to arrest further deterioration in its condition. Secondly, if it were not to suffer a second and perhaps permanent occlusion, some way of preserving it for future reference was needed. As I saw it, the Institute could not offer either of these facilities. After a long period of reflection and enquiry, I offered the manuscript to the Adolph Basser Library, in Canberra. This library, part of the Australian Academy of Science, is devoted to the preservation of original documents relating to science in Australia. There, it seemed to me, was an appropriate place to house this historic document; there the minute book would receive the repair it needed; there it would be tolerably certain of preservation; there under the control of a disinterested administration it was accessible to anyone who wished to refer to it. However, a pilgrimage to Canberra to consult original manuscripts is not a common amateur accomplishment. I therefore made it a condition of the gift that a copy be made of both the minute book and the call book for the Institute. This was accepted, and the copy was sent late in 1975 to the Federal office; I also have a copy.

I have set out this matter in some detail for several reasons. I think it should go on record where the material is available for reference; few members of the Institute are aware that the Institute has this copy. I also wished to explain, to present and future historians of the Institute, how this arrangement came about. Thirdly, there will soon be no person with experience, and hence some sort of recollection, of those years and this book may be the only surviving record of the beginnings of amateur wireless in Victoria; I have included the information about the provenance of the book to assist researchers in setting a value for the creditability of what it offers.

Yours faithfully,

Deane Blackman VK3TX. ■

3 Gardenia Street, Pakenham 3810.
3rd March, 1980.

The Editor,

Dear Sir,

I have recently been given an old radio receiver which, if possible, I would like to restore. So far I have been unable to find any material on the unit, which is a 5-valve made by Splitdorf, and is a model R500, serial No. 19891.

It has three single-gang variable capacitors, two wire wound variable resistors and two transformers, one of which appears to be a power supply. Unfortunately, a substantial amount of the wiring is missing, and I cannot trace the circuit.

Perhaps one of your readers may be able to help with information on this receiver to help me in this project, and I would be most grateful for any circuit diagrams, etc., which I undertake to copy and return with the utmost care.

Yours faithfully,

D. E. Jackson VK3VAA. ■

CONTESTS

Wally Watkins VK2DEW
Box 1065, Orange 2800

CONTEST CALENDAR

May

10/11	SANGSTER SHIELD CW (NZART)
11	RSGB WAB HF-CW CONTST
17/18	COMMON MARKET CONTEST
17/18	FLORIDA QSO PARTY
24/25	CQ WORLD-WIDE WPX CW CONTEST

June

14/15	VK/ZL/OCEANIA RTTY CONTEST*
21/22	21st ALL-ASIAN PHONE CONTEST
28/29	ARRL FIELD DAY

August

REMEMBRANCE DAY CONTEST

* This is not a WIA contest. Logs to ANARTS, c/- 55 Prince Charles Road, Frenchs Forest 2086.

SANGSTER SHIELD (NZART)

CW contest, 80 metres only, 0800-1200Z each day. Exchange is RST from VK stations but they must receive RST **plus** branch number **plus** power input — 579/18/04.

All overseas contacts are worth 10 points.

Scoring is total points multiplied by the number of different branches. Certificates to overseas stations with the highest score.

Logs to Jock White ZL2GX, 152 Lytton Road, Gisborne, before 30th May.

CONTEST RESULTS —
20th ALL-ASIAN PHONE CONTEST 1979

Oceania — Multi-band single op., VK6NBU; multi-band multi-op., VK2DCB.

JARL Certificates also to: Single band op., 21 MHz, VK2XT; single band op., 28 MHz, VK6NEX.

BRIEF RULES FOR 21st ALL-ASIAN DX CONTEST 1980

PHONE

48 hours from 0000Z to 21st June to 2400Z 22nd June, 1980.

CW

48 hours from 0000Z 23rd August to 2400Z 24th August, 1980.

Operation on all or one band.

DIVISIONS

Single op., on band; single op., multi-band; multi-op., multi-band.

EXCHANGE

RS(T) plus 2 figures denoting age (YL's RS(T) plus 00).

Full details including scoring and recommended sample log sheet and front sheet — SASE to FCM only. ■

Amateur Radio in Emergencies

The following comes from IARU R2 News of December 1979 and is by VP2VI —

"Hurricane David, one of the worst of this century, passed over Dominica leaving devastation in its wake. Telephone and power lines were destroyed. After the hurricane, Fred White J7DAY in Dominica was the only means of communication with the outside world. He had been operating continuously for 48 hours when he received a message from Dr. Robin Tattersall, via VP2VI, asking if he could be of assistance. A message came back from the Prime Minister asking him to come immediately. J7DAY also asked Bob Denniston VP2VI to come to Dominica and help with the operation of his station as he was getting very tired by this time. He also asked him to bring another amateur station. So, while Dr. Tattersall was arranging for an Air BVI charter flight to Dominica, Matt and Bob Denniston packed their amateur station and food and headed for the airport.

Pilots Gordon Nissen and Jeremy Hunter flew the group to Antigua and then to the Melville Airport in Dominica. The group consisted of Dr. Tattersall, Dr. McKenzie, Bill Schenenfelt of the Red Cross, and Matt and Bob Denniston with the amateur radio. As they flew over the island approaching the airport they could see that all the banana trees were flat on the ground and most of the coconut palms were broken off. These crops were Dominica's two main sources of income. The road from the airport to Roseau, 35 miles away, was blocked by landslides and fallen trees. There was one helicopter ferrying doctors to Roseau; Tattersall and McKenzie managed to get to Roseau the next day after arrival. Matt and Bob Denniston and Bill Schenenfelt rode in a pickup truck to where the road was blocked. As they passed giant trees with no leaves or bark left on them the driver pointed out Carib Indians along the road by their reserve in the mountains. The trio then hiked several miles carrying their radio equipment and supplies over the trees and the landslides blocking the road till they came to the chew working up the road from the other direction. There they met the Captain of the HMS FIFE which had been anchored off Cane Garden Bay a few weeks ago and was now giving relief aid to Dominica. He detailed a car and driver to take them down to the police station in Roseau where Fred White and his station was set up. The road was washed half away in places along the coast and warehouses in the seaport were knocked

down by the 30 foot waves whipped up by the 150 miles per hour sustained winds and higher gusts in David. Many houses were badly damaged or demolished.

The police station, a three-storey reinforced concrete building, was still in good condition (about the only building that was) so the government officials had moved into it. The Commissioner of Police met the three men from Tortola as they arrived and took them through the crowd and into the police station in his car. Fred White was still operating J7DAY when they arrived. He was very tired and very glad to see them. That night he had his first night's sleep while Bob and Matt alternated at the operating position.

The next day W0DX/J7 was set up in the same room with Fred so that messages could be sent and received simultaneously on two amateur frequency bands, thereby doubling the traffic handling capacity. Frequencies used were 3808 kHz and 7213 kHz, the frequencies of the Antilles Emergency and Weather Net, a network of stations in the Caribbean which meets twice daily and has been tracking hurricanes for more than 20 years. Also used were 3505 kHz and 7185 kHz, frequencies borrowed from the Barbados amateur net.

The operation continued for seven days more and over 3,000 messages were handled most of which were to and from government officials of various countries. The largest volume of traffic was to and from the US Embassy in Barbados which organized a large relief effort. Two other radio amateurs, 8P6GB/J7 from Barbados, and KP2A/J7, John Ackley from St. Thomas, US Virgin Islands, brought their stations to Dominica, set them up at the Red Cross headquarters and handled 3,000 messages concerning the health and welfare of Dominicans." ■

The Intruder Watch — World-Wide

As you all know, for amateur radio (as for ITU) the world is divided into three regions, region 1 being Europe and Africa, region 2 the Americas, and region 3 the rest of the world.

I, as IARU Region 3 co-ordinator, am responsible for the rest of the world, specifically the Pacific and Asia.

In Australia, the Intruder Watch is divided into the Federal, with Graeme VK3NXI as co-ordinator, and the States with their respective co-ordinators.

It has been my experience over a ten year period that the apathy shown by members to participate in reporting intruders is the one stumbling block facing the organization, and it is this fact that gives our administration the excuse for not acting on reports as they should.

Unfortunately, this apathy is not confined to Australia alone, but is world-wide. Apparently the average radio amateur has the same make up all over the world, and his attitude of "I'm OK, let George do it" predominatts. It is this trait which hampers the IW, and is an unfortunate phenomena because administrations take the line that unless many, many reports are submitted on any one intruder and their monitoring stations can find and also report him they cannot initiate a complaint to the offending country's administration.

When we talk about Intruders we do not mean CBers or fellow amateurs who sometimes disrupt communications, but commercial and Government stations who are permitted by their authorities to proliferate in our bands. We mean teleteype (F1), CW (A1), over the horizon radar, broadcast (A3), and harmonics and spurious emissions from such stations. Fundamental emissions by Iron Curtain countries are the hardest of all to eliminate, but by direct approach most times engineers, if alerted, will fall over backward to eliminate any spurious transmissions generated by their equipment, and welcome such approaches.

For many years now I have kept a regular weekly schedule with my contemporaries in the USA and in the United Kingdom with rewarding results. Monthly summaries of intruders submitted by Australia, New Zealand and Malaysia are sent to Bill K6KA, who evidently has a hot line to the FCC monitoring system in Washington, DC, and he often alerts them of reports submitted which he also has heard, and they file a complaint of harmful interference to the country concerned. "Harmful" is the key word here. No administration will take notice of reports unless it shows that "harmful" interference is present.

Some intruders are alerted to G5XB on our skeds, too, and then submitted to the British Post Office with rewarding results. They have been known to act upon reports submitted by Australia.

So far the only Asian country participating is Malaysia and monthly reports are regular. The Japanese prefer "to do their own thing", and only supply me with a summary of their findings at three monthly intervals. Although very sketchy, they are, however, very welcome. New Zealand is by far the most active in reporting, and Bob ZL1BAD forwards his reports monthly for my inclusion with the Australian and Malaysian reports to headquarters in England. He also forwards a summary for my records, and one to the US. The discussions over the air on 28500 kHz on a Tuesday at 2300Z (Wednesday morning our time) by Bill are very interesting, and anybody with the time and interest should listen to them. They are very illuminating!

The reports submitted by the few Australian members who take the trouble to do so are well set out, and identifications are often made, but our administration gives the IW a very low priority because they say "We don't get enough reports, so how can we take it too seriously". It behoves members to take more interest and get behind their IW to reverse that attitude. If our administration were swamped with reports they'd have to take notice and do something. **Think about it!** ■

ALARA

AUSTRALIAN LADIES' AMATEUR RADIO ASSOCIATION

In New South Wales there are several licensed YL operators located in all parts of the State. You may already have met these four Novices on the air.

Carol VK2NCL is from Tamworth and has been licensed for nearly a year now. She enjoys her share of DX on 10m when conditions are good. She describes herself as "guilty of being a real ragchewer". Carol can be heard having QSOs with VK stations and she often gets to meet the people she has contacted on air. Club activities such as Field Days and fox hunts give her those opportunities. Her OM, Bob VK2NLR, prefers homebrew activities, and Carol works by his side on most of his projects. They have two sons, ages 7 and 3.

Roma VK2NZW was studying for her Novice licence at the same time as her nursing exams. The nursing studies are now complete, the Novice ticket is in hand, and now Roma intends to upgrade. She shares the rig with her husband and can be heard most often on 10m .Roma's main interest in amateur radio is CW, and her QTH is Booral.

Geraldine VK2NQI is from Greystanes. Like many YL operators, her interest in amateur radio was sparked off by her OM, who in this case is an active SWLer. Geraldine is the ALARA net controller and feels that the net has helped quite a few YLs who are mic. shy get some operating experience and build their confidence. Her primary interest is DX, particularly YL DX.

Daphne VK2NXD became interested in radio back in 1935 when she took a correspondence course in radio reception. She became employed with Breville Radio and learned about quality control and how to test components. When the war broke out, she gained employment with another radio company and became the first woman there to take on tasks which previously only men had done. The war ended, Geraldine married, and for the next ten years she spent all her time working on home improvements and making her own clothing. Nev got his licence in 1956 and became VK2ZBQ. He encouraged her to study but it wasn't until the Novice licence was introduced that Geraldine decided to get her ticket also.

Her personal decision was reinforced by the members of the newly formed Liverpool and District Radio Club. Geraldine has had to re-organise her thoughts to stop thinking in cooking and dressmaking terms in order to comprehend volts, amps, and ohms. To absorb radio theory, she wrote circuit diagrams and formulas on every scrap of paper that was blank. "It's a good thing the waste bin can't tell lies," she says. Now that she has the Novice licence, Geraldine has set her mind to study for the AOCP.

YL Activity Day is the 6th of every month. Look for YLs on the hour, every hour, at the following frequencies: 3.688, 7.088, 14.288, 21.188, 21.388, 28.688. If no YLs are heard, please call "CA YL".

If you are a YL and would like to join ALARA, please contact the Secretary, Box 110, Blackburn, Victoria 3130.

Maggie VK3NQQ. ■

AROUND THE TRADE

ICOM RELEASES NEW 2m TRANSCEIVERS

Icom have recently added two new transceivers to their list of numerous communications equipment.

The first is the IC2A, a 1.5 watt 800 channel transceiver powered from a snap on-off nicad pack of three optional sizes. The IC2A is an extremely small unit as the photograph shows. Unlike similar units incorporating digital frequency reading techniques, the IC2A remains a simple unit to operate with channel selection via thumb wheel frequency change selectors. Optional accessories include speaker/microphone and nicad charger.

Second of the new line is the IC26OA — a mobile SSB/FM/CW transceiver incorporating scanner, twin VFOs, NB, CW break-in and CW monitor. The 10 watt unit is sold complete with mobile mount, DC leads and microphone. Current list price is $599.

For further information on both units contact Vicom International Pty. Ltd., Melbourne. Phone (03) 699 6700, or Sydney (02) 436 2766. ■

NEW FREQUENCY RANGE SKY ACE AIRBAND RECEIVER

GFS Electronic Imports of Mitcham, Victoria, recently announced that their hand-held Airband Receiver, the Sky Ace R517, is now available with new frequency coverage.

The previous version covered the range of 118 to 144 MHz. The latest version now available covers 108 to 140 MHz, allowing its users to take advantage of the many Aerodrome Terminal Information Services (ATIS) transmitted within the navigation band (108-118 MHz) by major aerodromes throughout Australia.

All other features on the new Sky Ace are the same. These include the ability to install up to three crystal locked channels or, if desired, use the across-the-band tuning supplied. A fine tuning control is also included. Sensitivity and performance are excellent with price still the same at $104 plus $2.50 post. Crystals (if required) are $7 each for standard frequencies or $17 each for special frequencies.

For more information on the Sky Ace R-517 contact GFS Electronic Imports, 15 McKeon Road, Mitcham, Victoria 3132. Phone (03) 873 3939. ■

DICK SMITH IN ADELAIDE

Dick Smith's Adelaide store has moved — to much larger premises a few hundred metres away in the same street, Wright Street.

The new premises are significantly larger, and also provide adequate off-street parking.

The new building has an area nearly half as big again as the existing store (550 sq. m vs. 370 sq. m), and also has parking space for approximately twenty vehicles.

It was officially opened by Dick in March, and is located at 60 Wright Street, Adelaide. Phone (08) 212 1962. ■

NEW SX-200 SCANNING RECEIVER

GFS Electronic Imports of Victoria, Australian agents and distributors for JIL, recently announced the release of a new model scanning receiver, the SX-200.

The new SX-200 covers quite a large frequency range, including 26-88 MHz (encompassing 27 MHz CB band, 10 metre and 6 metre Amateur Band, and the Australian VHF LOW BAND), 108-180 MHz (Aircraft Band, Satellite Band, 2 metre amateur and HIGH BAND VHF), and 380-514 MHz (UHF Commercial Band, 70 centimetre Amateur Band and UHF CB Band).

This nearly continuous coverage from 26 MHz combined with the SX-200's ability to detect both **AM** and **FM** signals makes the unit a very versatile device.

Other features on the SX-200 include the ability to accept **upper** and **lower search limits** (allowing signal searching over a given band), **fine tuning** control for monitoring away from standard channels, 0 or 4 second **scan delay, special squelch** circuitry which causes the squelch to bypass spurious or unwanted carriers when scanning, **digital readout** dimmer, **non-volatile memory, variable** scan and seek **speeds,** 12 volt **DC** or 240 volt **AC** operation, and **16 memory channels** that can partially or all be scanned.

For more information about the new SX-200 contact the Australian distributors, GFS Electronic Imports, 15 McKeon Road, Mitcham, Victoria 3132. Phone (03) 873 3939. ■

INTERNATIONAL NEWS

RECIPROCAL LICENSING

Hearing about tighter controls over the issue of reciprocal licences, it is refreshing to read in February 1980 QST that Canadian licensed radio amateurs may operate their stations in the USA without having to obtain a written permit from the FCC. The reverse is also permitted on the same basis.

In a letter dated 3rd March to an enquiry from an interested expatriate in Tokyo, the Secretary of the Postal and Telecommunications Department stated that an approach had been made by the Department to the Japanese Authorities in an effort to obtain for Australian amateur licensees visiting Japan privileges equal to those extended by Australia to overseas amateurs visiting this country. Members will be aware that any amateur of any nationality can obtain a **visitor's licence** in Australia. See AR for January 1978, p. 25.

In a circular from JARL they state that nationals of the USA, Federal Republic of Germany and Finland are at present capable of operating club stations in Japan under a system rather different from that of the normal run of reciprocal licensing agreements.

The address of the Japanese licensing administrations is The Radio Regulatory Bureau, Posts and Telecommunications Ministry, 2-3, 1-chome, Kasumigaseki, Chiyoda-Ku, Japan.

JARL also announces details of the 1980 Amateur Radio Festival to be held in the new hall at the International Trade Centre in Tokyo from 22nd to 24th August, 1980. There were some 30,000 visitors to the third such Hamfest held in 1979 and more are expected this year. Further details are obtainable from JARL, Box 377, Tokyo Central, 100-99, Japan.

Finally, from 1-2-1980 the VK5 QSL Bureau has been taken over by Ray Dobson VK5DI, 16 Howden Road, Fulham, SA 5024. Other amateur societies please copy. ■

MAGAZINE REVIEW

Roy Hartkopf VK3AOH

BREAK IN December 1979
Galbraith Power Supplies. 18 Amp (C).

RADIO COMMUNICATION January 1980
Annual Index (G). Repeater Logis Control System (TC).

QST May 1979
VMOS Transmitters and Amplifiers (GC).

QST December 1979
Low Pass Filters (TG). AMSAT-OSCAR Phase III (G).

QST January 1980
3 Band VFO (NC). Universal Digital Frequency Readout (C). Antenna Matching Network (GC). Microprocessor and SSTV (GT).

HAM RADIO December 1979
VHF Pre-amplifiers (GT). 2 Metre Synthesiser (C). Log Periodic and Antenna Design (GT). 1969-1979 Cumulative Index (G). L Band Local Oscillators (GC).

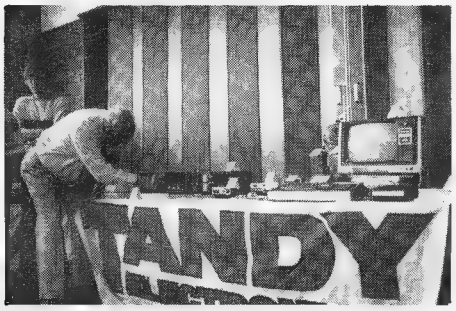
HAM RADIO January 1980
Video Console for ATV (C). Yagi Antenna Design (T). HF Log Periodic Antennas (TG). Audio Processor for Reception (GC).

CQ February 1980
Q Signals for Amateur Radio (NG). ■

HELP WITH INTRUDER WATCHING

DIVISIONAL NOTES

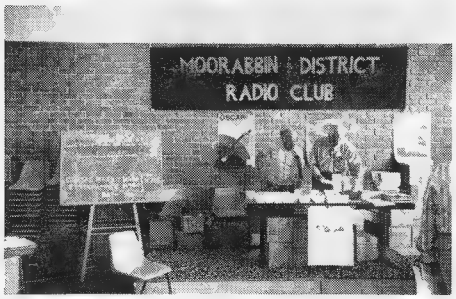
The Trade Display held at the Club rooms of the Moorabbin and District Radio Club in Turner Road, Moorabbin, on Friday, March 7th, was a great success.



Organised by the "Old Timers" Tuesday morning coffee group, the display of more than $20,000 of gear was provided by ATN Antennas, BWD Pty. Ltd., Bail Electronic Services, Elmeasco, Instant Component Services, Philips, Scalar Antennas, Tandy Cheltenham, and Vicom Pty. Ltd.

All exhibitors expressed pleasure at the attendance and interest from more than 600 visitors during the 10 a.m. to 9 p.m. exhibition.

Allan Doble VK3AMD,
Publicity Officer. ■



6 METRE BEACON

Considerable progress has been made on the Geelong Amateur Radio TV Club beacon on 52.330 MHz. The beacon is presently running on an attended basis at Lara using 3 watts to a set of crossed dipoles. The 25 watt power amplifier will be completed by the time readers read this column and the beacon installed on a permanent basis at Mt. Anakie. (From GARC Newsletter, March.) ■

STOLEN RADIO EQUIPMENT

Stolen Radio Equipment: During a burglary on the 21st February, 1980, all radio equipment, property of VK2VLC, was stolen. Description as follows:— Kenwood TS520S transceiver, **serial No. 840457;** Kenwood AT200 aerial tuner, **serial No. 28379;** Kenwood MC50 desk mic.; Kenwood world ham clock; Kenwood digital frequency readout to fit Kenwood 520S. Should any amateur, either in NSW or interstate, know of the whereabouts of any of the abovementioned items please contact your local police or Brian Belcher VK2VLC direct on Sydney phone (02) 438 2647 or (02) 438 2370 (Bus.) and reverse charges.

YOU and DX

Mike Bazley VK6HD
8 James Road, Kalamunda W.A. 6076

HEARD ISLAND

Listening to comments over the air, it would appear that certain amateurs are upset because of the letter I published "in March AR" concerning the Radio Officer aboard the "Cape Pillar". I believe this criticism was unjustified and that several points need to be considered before a judgement is made. Firstly with so few amateurs contributing to this column, though it appears to be widely read, any information on DX activity is welcome. Secondly, under the heading "DX Rumours, Fact and Fiction", readers are left to make their own value judgements on the information presented. Finally, I did suggest "the best bet would be to check the usual DX frequencies". Whether the recent VK0RM operation will count or not time will tell; as I have said so many times before in this column, work them first and worry about the status later.

DX RUMOURS, FACT AND FICTION

The gremlins crept into the story in March AR concerning VP1KS, several VKs claiming to be the only VK QSO. This should have read "including some to VK". I do not know that he worked into VK on 80 through to 10, though I believe he did not have many QSOs with Australia.

It finally looks as if Burma will be on the air once again. Time: 15th April to the 15th June. Frequencies: **SSB,** 3900, 7075, 14160, 21300 and 28440; **CW,** 6 kHz inside each band. It will be an official UNICEF operation. All QSLs and QSOs will be numbered and if you do not get your QSL!! The operators are suggesting that those fortunate to QSO **XZ0ONU** might like to make a donation to the UNICEF Fund "Medical Needs of Children". (This information supplied by HS4AMI via VK3YL.) Since receiving the information from Austine VK3YL, this writer has heard that there will be six operators and that the SSB frequencies could be 3805, 7075, 14195, 21300 and 28440. For those interested, I would suggest listening to "Sea Net" 14320 kHz daily at 1200Z for further information.

Further to my note on **Jan Gould WA6YQW** in March AR, the following extract from the ALARA Newsletter is, I think, of interest.

"DXPEDITIONER INJURED

We were quite distressed to learn that Jan Gould WA6YQW had been severely injured in an airline landing accident as a member of a DXpedition. The other members on board were not hurt but Joan was pinned by heavy equipment that had broken loose from the cargo hold when the airplane impacted into bush adjacent to the runway. Jan has crushed bones and a broken back.

Many VKs met Jan on air when she operated on a DXpedition to Chatham Island last year. Articles

PHOTO 1:

The OH7BR antenna system. Feast your eyes upon the 40m 2 el. at 38m, 20m 4/4 el. at 45m and 10m 6 element beam at 18m! Who said DX was hard to get? Obviously the man with a long wire!

PHOTO 2:

Co-authors of the book "The Radio Amateurs Conversation Guide", at left OH2BAD and at right OH2BR.

about 'That Chatham Gang' appeared in several radio magazines. She is an alive and vital lady who loves hamming with her good friends around the world.

Jan is being moved to a hospital closer to her home QTH, and she has told us that the cards and good wishes have helped to keep her going since the accident. Please address correspondence to Jan Gould WA6YQW, 1542 Beach Ave., Anaheim, CA 92802, USA."

An interesting book, which is published by OH1BR and OH2BAD, has been received by VK6HD. **"The Radio Amateurs' Conversation Guide"**, to give it its full title, gives in general form a QSO in eight languages (English, German, French, Italian, Spanish, Portuguese, Russian and Japanese). The book is planned in QSO format, moving from the CQ call through the various phases of report, QTH, WX, etc., and finishing with signing off procedures. There is also a dictionary at the end itemizing the most common words used. With this book it should be possible to have a QSO with some of those rarer South American countries. Cost is US 7 dollars or, if sending a bank order, 8 dollars (the additional dollar is to cover bank charges). Write to **Transelectro OY, Box 8, SF-00610, Helsinki 61, Finland.** For the DX chaser I believe it is good value.

It is rumoured that **9L1CA** has been transferred to **9U5, Burundi.** Let's hope that a licence is forthcoming so that this one can be taken off the wanted lists.

Does anyone know the QSL information for **CM2ER, C5A??** via **OZ5QU, W5JMM/SU** and **K7SE/VP2A?**

It would appear that there is a pirate BV2A active on 15 metres, asking for QSLs via JA1KSO. As far as this writer is aware Tim BV2A is active on 10 and 20 metres CW and SSB and has always handled his own QSLs.

Are SWLs a dying race? It has been suggested that as soon as people get into contact with amateur radio they immediately try for their Novice ticket. Looking through the call book there appears to be quite a few "L" series issued. How about letting us know what you've heard?

LU3ZY, the new operator "Manuel", has been active on 14290 kHz, often working to a list by I1AGC. Time: 2100Z.

Well, I'm afraid that's the short offering for the month. Once again DX information would be appreciated, bearing in mind that copy has to be finished at my QTH 6 weeks before AR publication. Thanks to VK3YL, VK6LK, VK6NE, VK7RO, L70107 and "Geoff Watts News Sheet", 73 es DX Mike VK6HD.

QTHs YOU MAY HAVE MISSED

A35OM — via N6OM
CL0NA — Box 1, Havana
W7LPF/DU2 — via N2CW
HZ1SH — Box 3366, Jeddah
J28CC — Box 215, Djibouti
J28CB — via I8JN
WD8QGQ/KH7 — via KH6JEB
W7KHN/KH9 — via W7KHN
OA4JR — via WB9FMX
PR8ZPJ/9 — via W7BUN
TF5TP — via DL7MQ.
N4HX/TT8 — via ON5NT
VP2KAJ — via WB8LDH
VP2VEJ — via WB3KGY
3B9CF — via 3B8CF
4S7DX — via WB2VFT
6H1MEX — via XE1MEX
8P6KY — via WB4RRK

■

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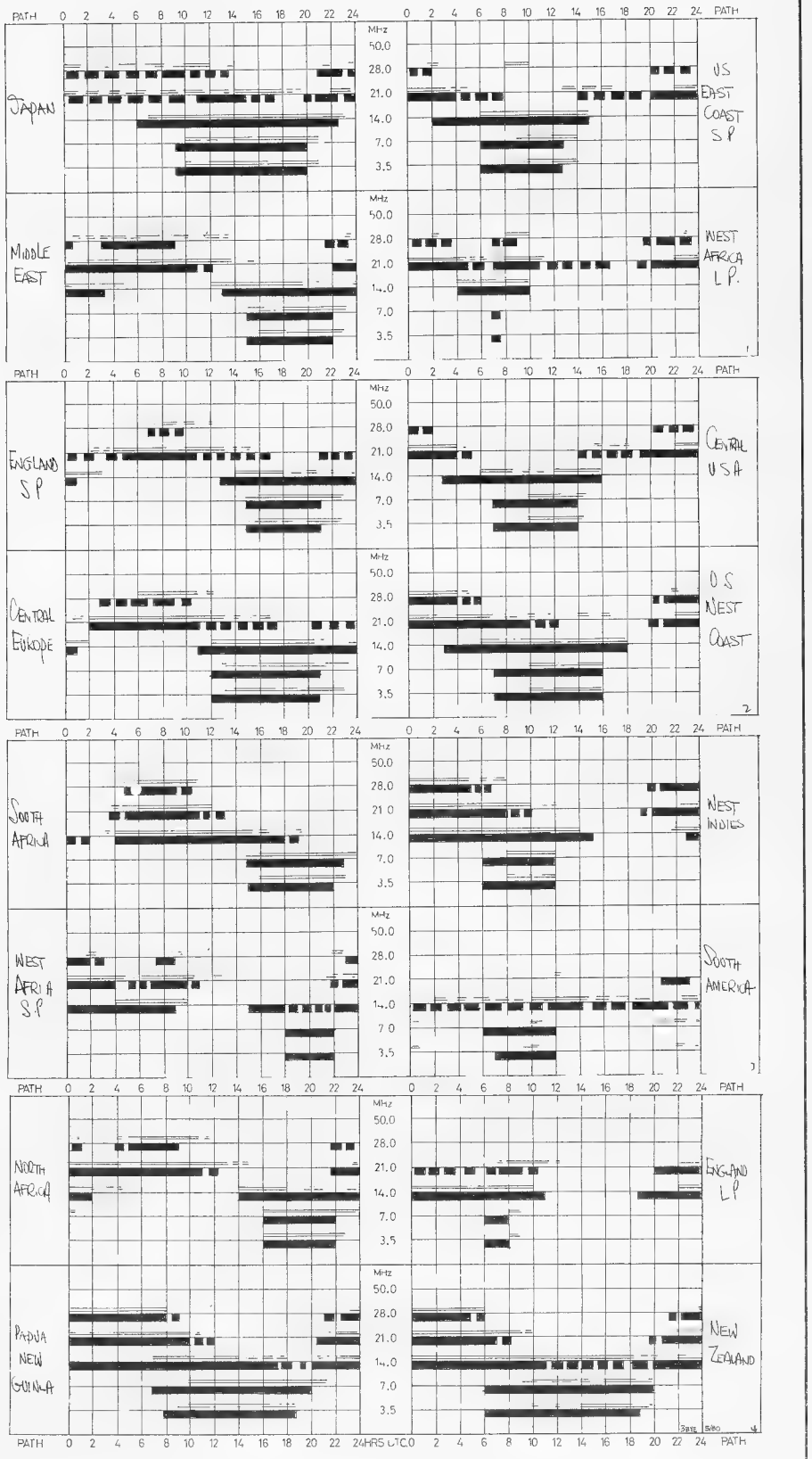
Len Poynter VK3ZGP/NAC



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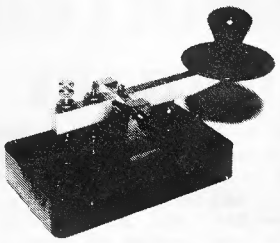

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- Closing date: 1st day of the month preceding publication. Cancellations received after about 12th of the month cannot be processed.
- QTHR means address is correct as set out in the WIA 1979 Call Book.

TRADE HAMADS

For a very long time commercial advertising has not been accepted in AR Hamads, but as the result of discussions at the 1978 Federal Convention a decision was made to open up a "Hamads-Trade" section. The rate will be $10 for 4 lines plus $2 per line (or part thereof), minimum charge $10, pre-payable. Copy is required by the first day of the month preceding publication. This will mean that in future ordinary Hamads submitted from members who are deemed to be in the general electronics retail and wholesale distributive trades should be certified as referring only to private articles not being re-sold for merchandising purposes. ■

FOR SALE

Surplus Equipment — Collins KWM2A round emblem with 240V supply, unmarked cond., $1,250; Kenwood TS120S, new, unopened, $630; power supply, new, unopened, $190; Drake T4XC with Drake AC supply, new, plus Drake SPR4 Rx, six months old, the lot $350. Cliff Coverdale VK2VK. Ph. (065) 52 4477 Bus., (065) 59 1508 A.H.

Kenwood KP202, 2m, hand-held, with Ch. 34, 40, 50 and rptrs 1 to 8, nicads, charger, extl. mic. connector, BNC connector, leather case, $160; plug-on synthesiser, 144 to 148 MHz in 25 kHz steps (95 per cent finished), $50. Mike Richter VK2BMM. Ph. (02) 476 3861, (02) 233 5330 Bus.

Home Brew Builder's Note: HY-Q single sideband filter QF09002, complete with 8998.5 kHz and 9001.5 kHz crystals, unused, current price $69, sell for $50 post paid; suits the Hepburn building blocks txcvr of 1975 and others. VK2AZT. Ph. (069) 42 1392.

Yaesu 2m FM Txcvr FT223, rpters 1-8 inclusive, simplex 40, 50, 51, plus private call channel, mic., mounting bracket, handbook, etc., included, $180. Ted Egan VK3XT, QTHR. Ph. (03) 751 1721.

TR7200G 2m FM Tcvr, complete, $170 (VFO 30G); external VFO for above rig, $70; 5/8 GP antenna, $30. VK4CJ, QTHR. Ph. (07) 343 2235.

FL2000B Linear Amplifier, 2 x 572B triodes in grounded grid, best offer. VK2BOA, QTHR. Ph. (049) 61 1580.

Yaesu Linear FL2100B, as new, 2 hr. use, in orig. box, $450 firm; 2 new 572B tubes, in cartons, $40 ea.; 2 bandit quad hubs, new, $6 ea.; solid brass key, silver contacts, $15; 2m 5/8 Asahi whip, new $8; Hustler RM80 resonator, new, $15. VK2FY, QTHR. Ph. (02) 602 9043.

Linear Parts — One used but good 4/100 tube plus brand new SK500 socket, SK506 chimney and special heat sink top cap, the lot $100; tower, 70 ft. steel lattice, four legs 6 ft. at base, never used, fully hot dip galvanised, local government rules forbid me to assemble, $400. VK2RG. Ph. (02) 644 9193.

FTDX560 Tcvr, 160-11/10m, $400; FTV650 6m Txvtr, $125; MB40A 40m S/S mobile Txcvr, $125; multi 7 2m FM Txcvr, rep/anti 1-9, 40, 50, $150; TCA1677 2m FM Txcvr, 25W, 4 Ch., $50. Don VK2ADY, QTHR. Ph. (067) 65 8664.

AX-190 Rx, plus matching speaker, perf. order, $130, ONO; also 10m txcvr, 28.310, $600; 7KC slide, 15W PEP, perf. order, $150, ONO. Wayne Bell VK3NNG. Ph. (053) 67 2816.

Txcvr, 2m "Icom" IC211, little used, frequency unstable; a letter from maker advises servicing procedure and says trouble probably IC6 in PLL unit; with fault $450 firm. VK2CE, QTHR. Ph. (02) 871 7758.

Collins 51J4 Rx, b/c to 30 MHz with cabinet and manual, $350; Drake MN200 antenna matcher, as new, $250; Daiwa RF550 speech processor, $145; Heath SB620 scanalyser, $75; Heath IB28 impedance bridge, $95; Heath IT121 transistor/FET tester, $75; Comdel RF speech processor, $95; manuals for each item; will consider offers. VK3BM, QTHR. Ph. (050) 32 4102.

Yaesu FT101E Txcvr, used less than ten hours, surplus to present requirements, complete with all accessories, including 700 Hz CW filter, mint cond., also unused Astatic D104 microphone, complete with stand (cost $100 to land from USA), will not separate, $650 the lot. Roth Jones VK3BG. Ph. (03) 848 7945 evenings.

HRO ("National") SS Comm. Rcvr, c/w coil boxes from 100 kHz to 30 MHz, incl. BC band, optional bandspread on 80, 40, 20, 15 and 10m bands, recently modified and overhauled, new front end using GBA6 1st and 2nd RF stages, GBE6 mixer and GC4 osc. with added GAL5 noies limiter and GBE6 product detector for SSB, extra vernier on main dial, panel mounted osc. trimmer, adjustment on SSB, also regulated power supply, storage boxes for spare coils, IF xtal, numerous manuals, circuits and many spares, still outperforms many modern se's, excellent cond., finished in light grey, $400. VK3KP, QTHR. Ph. 20 5929 Bus., 509 7617 AH.

TV506 6m Transverter, 3 mths. use, still in orig. carton and with manual, $195. George, QTHR. Ph. (071) 41 1544 Bus., (071) 48 7293 AH.

Atlas 210 Txcvr, complete with AR-230 power supply, mobile mounting kit, DC cable, mic. and handbook, $750; Kenwood AT-200 SWR meter-antenna tuner, $120; TH3JR antenna, $2;. VK3DH. Ph. (03) 387 2531.

Microwave Module Transverter MMT432/144, all mode, 2m, 10W input, 10W 432 MHz output, $200; Icom 502 SSB 6m portable, $160; Kyokuto 2m FM tcvr., ex. cond., 800 channels, digital readout, fully synthesised, $250. VK2ZDJ, QTHR. Ph. (069) 62 4937 AH.

Kenwood TS-520S, exc. cond., with manual, novice conversion provided, $550, ONO; 11-80m Dick Smith transverter, $80, ONO; US army type BC-348 Rx, good cond., $150, ONO. Keith VK4AKA. Ph. (074) 62 3147 AH.

Sell variety pre-WWII component parts, assortment coils, var. condensers, vernier dials, var. grid leaks, meters, etc., etc., plus many types octal and earlier valves. Send SAE for list to VK4SS, 35 Whynot St., West End, Brisbane 4101.

Drake 260W Input TR4CW Txcvr., AC-DC P/S, NB and 500 Hz filter, hi imp. mic. and 18 AVT multi-band ant., $725; Kenwood TS-700A 2m txcvr, AC-DC P/S and mic., incl. Cushcraft "Ringo" vert. antenna, $475; Cushcraft 10-11m vert. ant., $40; RTTY gear model 15 50 BD sync. motor, $40; Siemens 68F tape teleprinter and punch, 45-50 BD, /45; triple head TD-14, 45-50 BD, $35; ST-5 demod., incl. P/S, in cabinet, excellent performer, $55; AK-1 Hal. modulator, variable shift, $40. VK2ZN. Ph. (02) 76 9647.

Drake SSR1 Comm. Rx, 0.5 to 30 MHz, solid state, 220V AC/12V DC, as new, still in the orig. carton, book and accessories, $200. VK2ZFN, QTHR. Ph. (02) 560 9415 Bus.

New Unused Items: Kenwood TS820(S) CW filter, 35S noise cancelling mic. high imp. and GE low imp. mic., both include 4-pin plug, etc., what offers? VK6NRO, 111 Ravenswood Dr., Nollamara 6061, WA. Ph. (09) 349 4471.

Kenwood TS520S Tcvr., g.c., 12 mths. old, origi. packing, and manual, DC-DC converter, VFIO dial mod. for finger tip tuning, MC-50 mic., $650; 3 el. 10m Yagi, rigid construction, $50; SWR, PWR, mod. FS meter, 0-1 kW, useful freq. range, 3.5-150 MHz, $40. Peter VK3VAH, QTHR. Ph. (03) 288 8741 AH.

IC22 2m FM Txcvr, repeaters 2 (and reverse), 3, 4, 5, 6, 8, simplex 40, 50 Victor, recently checked by dealer, v.g.c., $120; IC202 2m SSB portable, used twice, $150; BC211 frequency meter with AC P/S, $50; all copies of Amateur Radio Action; best offer; will consider exchange solid state 6m or 70 cm gear. Leo VK3ZGF, QTHR. Ph. (03) 25 3968.

Swan 350 Txcvr, 350W PEP, SSB, good cond., proven performer with long term stability, complete with manual, mic., heavy duty power supply and spare finals, $350. Nick VK3TY. Ph. (03) 725 5116.

SILENT KEYS

It is with deep regret that we record the passing of —

Mr. D. W. ALBRECHT	**VK4ADA**
Mr. R. J. OVERELL	**VK3AOR**
Mr. H. M. ROBERTS	**VK5MY**
Lt.-Col. C. F. NEWTON-WADE	**VK4QW**
Mr. V. KERR	**VK4LK**
Mr. AMOS	**VK2ANK**

OBITUARY

Mr. JOHN AMOS VK2ANK

John Amos, of Badgery Creek, NSW, passed away on Friday, April 14th, 1980.

John's radio background included service with the RAAF, AWA and commercial flying. In these services he operated for many years until ill-health forced his retirement, severing his connection with the airline industry.

To my knowledge John was the first operator to install and operate the radio gear for the first Sydney-Hobart yacht races. He did this for some years.

He was a dedicated and thorough technician and operator, and only ill-health prevented him continuing with amateur radio these last few years. His radio and RAAF signal friends will dearly miss him.

G. W. LANYON VK2AGL. ■

OBITUARY

Mr. C. F. NEWTON-WADE (NEWT) VK4QW Was born 22-8-1895 in Somerset, England, and operated first from 1912 to 1914 in London with a spark transmitter and receiving by Coherer before valves and voice. A copy of this Coherer is lodged in the care of the Brisbane Museum.

Later he was in charge of all communications in Jesselton where at that time the country was known as Sarawak. His call was NWX with plenty of room for rhombics, using a rotary spark gap transmitter.

Returning to England he operated from Portsmouth using valves in 1923 with the call 5PC.

in 1924 to 1932 from Jesselton, Colonel Newton-Wade operated as VS4A.

Subsequently after WW2 he operated from Sandakan, then British North Borneo, with the call ZC5NW.

In 1955 his Australian call was VK2AXW, issued on arrival in Sydney.

When Newton came to England for the opening of TVQ9 he became well known to all in joining the various net QSOs, always the centre of any discourse no matter how profound.

Newton operated until two days before death.

In respect the Coral Coast Group observed one minute's silence in the 7 a.m. hook-up.

de John Atkinson VK4RZ. ■

Kenwood TS520D Txcvr, with dynamic PTT mic., dynamic desk type mic. for VOX, $500; Kyokuto 2m txcvr, with reg. pwr. supply, PTT mic., quarter and five-eighth mobile whips, Cushcraft 11 el. 2m beam, with 50 ft. RG18U 52 ohm coax, $350; all in first class cond., little use. VK2BDB. Ph. (02) 546 2163.

Deceased Estate, all equipment in excellent cond.: Hipower Apadar regulated P/S 12V DC; Weller 100W 8100D soldering gun; Yaesu hand mic., suit 101, 101Z, 301, etc.; Yaesu FT301 solid state txcvr; Yaesu FP301 matching 20A P/S; home brew digital clock; Leader TR LDM 815 dip meter, still in box; Leeson base station power mic., good cond.; home brew antenna tuner for balanced lines; Dick Smith Q1140 multimeter with case, as new; Lanson TE1205 stereo/mono headphones; low pass filter, 1kW rated; Portalab 500D pwr/swr/field strength unit; brass hand key; paddle keyer kit, nearly complete; TE101 signal injector Archer electronic thermometer kits, as new, never constructed; Commander FU400 rotator control box and cable; TVI 30 low pass filter; CB receiving booster; tool box, 3 split trays, complete with components, suit hobbyist; Hygain 18 AVT 10-80m vertical trapped, as new; PA speakers, suit siren, burglar alarm, etc. (2 off); hobby boxes, two sizes; Yaesu RSM-2 gutter grip and complete se of Novice resonators 10-15-80; Unimetrix Stingray CB txcvr., exc. cond.; quarter wave whip, suit 10m stainless steel; best offer. Mrs. J. H. Hayhoe. Ph. (03) 842 5955.

Fernseh 14 in. TV Monitor, $25; 14 in. Marconi TV monitor with built-in wave-form monitor, $45. VK4CB, QTHR. Ph. (07) 202 6566.

WANTED

Handbook or Copy for Freq. Meter, AN/URM, 32A, price, etc., to VK4CB, QTHR. Ph. (07) 202 6566.

19 in. Rack, light construction; also low power 2m AM rig, home brew suitable. VK3AXE, QTHR. Ph. (03) 857 5882.

Beg, Borrow or Buy — service manual or circuit diagram panoramic adaptor, RAN type PRA-1. Ken Pincott VK3AFJ, QTHR.

Circuit Diagram and/or Handbook for AWA oscilloscope, type 1A56069, can return after photocopying. VK2NTF, QTHR. Ph. (060) 26 3282.

Hy-Gain 2 Element Quad, model 244. Baily VK7NZZ. Ph. (002) 64 1320.

Battery Box to suit Eddystone EC10 HF communications receiver. Hans Smit VK5YX, QTHR. Ph. (08) 74 2350.

Yaesu FC301 Antenna Tuner and Yaesu FV301 external VFO, preferably in cartons with all manuals, leads, jacks, etc. Details to VK8NDW, QTHR.

TRADE HAMADS

Kenwood Buyers, your money is needed urgently in the mission fields all over the world. I can't ask you to give them your money, but I can sell you Kenwood gear at a very low price and use any profit to help them in their work. TS120S $629; TS180S $1,100; R1000 $429. Ph. Cliff Coverdale VK2VK, (065) 52 4477 Bus., (065) 59 1508 AH.

High-Gain Beams for 40, 20, 15, 10, 6, 2 and 70 cm, also UHF CB and ATV repeaters, DSI frequency counters and kits, Mirage PWR/SWR meters, also 2m amps with preamp., 10W in 80W out, amp. with Rx preamp., suit 50-54 MHz. Write ATN Antennas, Box 80, Birchip 3483, for catalogue.

Amidon Cores — refer ARRL Handbook, iron powder and ferrite toroids, ferrite beads and sleeves for wideband RF amps. Large SASE for data/price list. R.J. & U.S. Imports, Box 157, Mortdale, NSW 2223.

ADVERTISERS' INDEX

AUDIO TELEX	17
AMATEUR RADIO ACTION	41
BAIL ELECTRONICS	27
CHIRNSIDE ELECTRONICS	31
CUSTOM COMMUNICATIONS	28, 29
CW ELECTRONICS	2
SCALAR INDUSTRIES	15
SIDEBAND ELECTRONIC IMPORTS	32
VICOM INTERNATIONAL	14, 26, 43, 44
WILLIAM WILLIS & CO.	41

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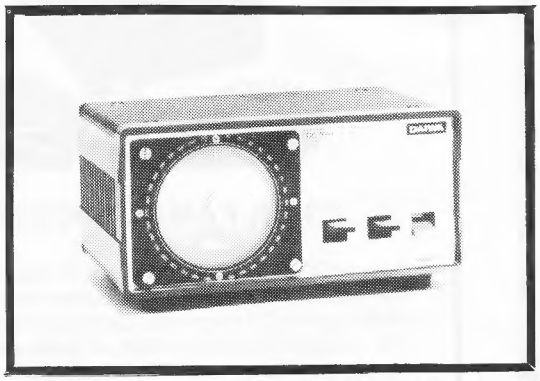
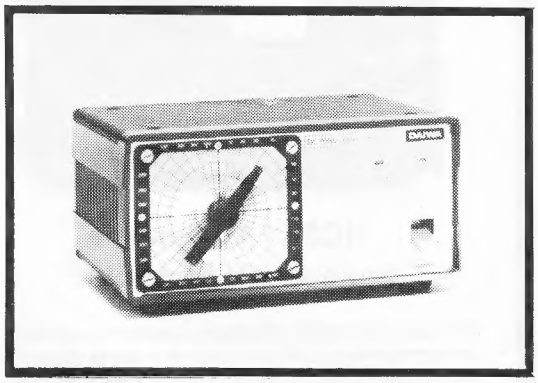


THE "R" TYPE CONTROLLER



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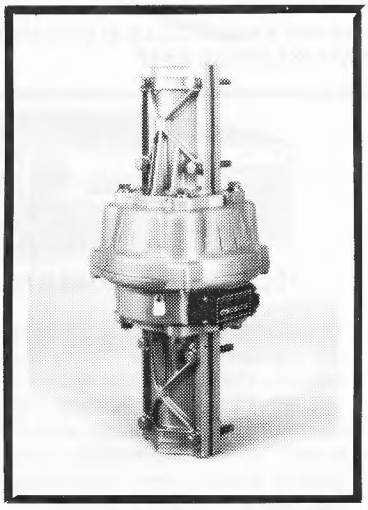
	DR7500 (medium duty)	DR7600 (heavy duty)
Power consumption	40VA	40VA
Motor	24V split ph ase	24V split phase
Rotation time (approx)	50 sec	64 sec
Rotating torque	500kg/cm	600kg/cm
Braking Torque	2000kg/cm	4000kg/cm
Vertical load	200 kg	200 kg
Weight	4.5 kg	4.6 kg
Cable	6 core	6 core

Prices: **DAIWA**

	Controller	Price
DR7500R Medium duty	"R"	189.00
DR7500X Medium duty	"X"	172.00
DR7600R Heavy duty	"R"	269.00
DR7600X Heavy duty	"X"	239.00



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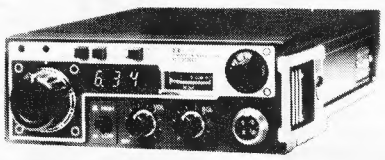

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